22x34

TOWN OF TEWKSBURY, MASSACHUSETTS

CONTRACT PW-24-09

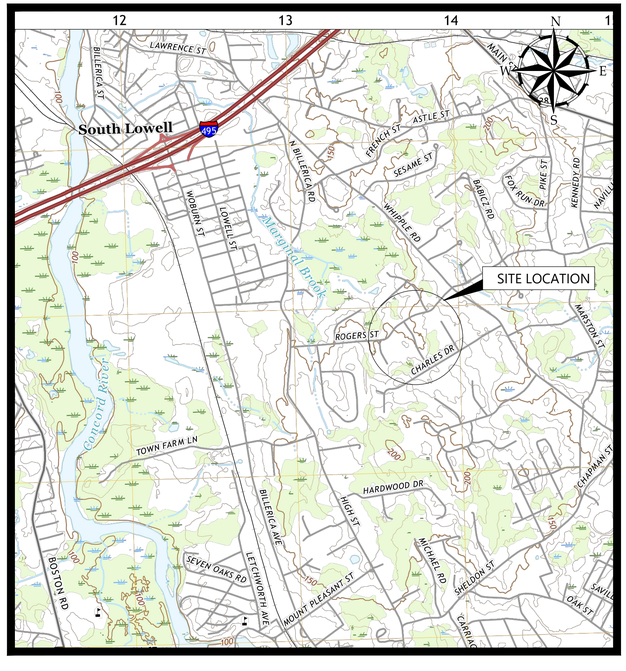
DEVONSHIRE ROAD PUMP STATION IMPROVEMENTS

ISSUED FOR BID - NOT FOR CONSTRUCTION

JANUARY 2025

PROJECT LOCATION MAP

Sheet List Table	
Sheet Title	**Sheet Description**
GENERAL	
G-000	COVER SHEET
G-001	GENERAL NOTES, LEGEND & ABBREVIATIONS
CIVIL	
C-101	SITE PLAN
C-901	CIVIL DETAILS-1
C-902	CIVIL DETAILS-2
MECHANICAL	
MD-101	PUMP STATION DEMO PLAN AND SECTION
M-101	PUMP STATION PLAN AND SECTION
M-901	DETAIL 1
ELECTRICAL	
E-001	LEGEND
E-005	SITE PLAN
ED-005	DEMOLITION SITE PLAN
E-010	DEMOLITION AND PROPOSED ONE-LINE DIAGRAMS
E-500	INSTRUMENTATION RISER DIAGRAM AND WIRING DIAGRAM
E-600	SCHEDULES
E-900	DETAILS



SITE LOCATION MAP

SOURCE: USGS TOPO QUADRANGLE

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

PE SEAL:

COMMONWEALTH OF MASSACHUSETTS
JASON D. JANCAITIS
CIVIL
No. 46814
REGISTERED PROFESSIONAL ENGINEER

Jason D. Jancaitis

Digitally signed by Jason D. Jancaitis
DN: C=US, E=jjancaitis@woodardcurran.com, O="Woodard & Curran, Inc.", CN=Jason D. Jancaitis
Reason: I agree to the terms signed by the placement of my signature on this document
Contact info: jjancaitis@woodardcurran.com
Date: 2025.01.22 16:59:09-05'00'

ISSUED FOR BID - NOT FOR CONSTRUCTION

CLIENT INFO:

TOWN OF TEWKSBURY, MASSACHUSETTS

DEVONSHIRE ROAD PUMP STATION IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0235334.00
DATE:	JANUARY 2025
SCALE:	XXX
DESIGNED BY:	JF
DRAWN BY:	CB
CHECKED BY:	MC
FILENAME:	023533400-G-000.dwg

DRAWING TITLE:

GENERAL COVER SHEET

DRAWING NO:

G-000

\\woodardcurran.net\shared\Projects\0235334.00 Tewksbury MA Devonshire Pump Station Upgrades\wip\Drawings\General\023533400-G-000.dwg, Jan 22, 2025 - 2:08pm JFORTIN

GENERAL NOTES

1. EXISTING CONDITIONS, RIGHT-OF-WAY LINES, AND PROPERTY LINES SHOWN HEREIN ARE BASED ON FIELD RECORD DRAWINGS FROM "SEWERAGE WORKS IMPROVEMENTS PHASE 9 CONTRACT NO. 31", BY CAMP DRESSER & MCKEE, DATED JANUARY 2007. RIGHT-OF-WAY LINES AND PROPERTY LINES ARE APPROXIMATE.
2. THE ELEVATIONS DEPICTED HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). THE HORIZONTAL DATUM DEPICTED HEREON IS BASED ON THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83).
3. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCH MARKS NECESSARY FOR THE WORK.
5. PROTECT AND DO NOT DISTURB PROJECT BOUNDS AND ANY EXISTING PROPERTY LINES. IF DISTURBED, RESET AT THE CONTRACTOR'S EXPENSE, BY A PROFESSIONAL LICENSED LAND SURVEYOR REGISTERED IN THE STATE OF MASSACHUSETTS. COORDINATE WITH OWNER IF NOTIFICATION OR COORDINATION WITH ADJACENT PROPERTY OWNERS IS REQUIRED.
6. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, WORK TABLES, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES. SEE SECTION 00 31 00 FOR PROJECT INFORMATION.
7. THE LOCATION, SIZES, ELEVATIONS, AND TYPES OF ALL UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE REPRESENTATION ONLY, ARE BASED UPON A COMPILATION OF PLANS OF RECORD AND DOES NOT WARRANTY NOR GUARANTEE THE LOCATION OF ALL UTILITIES DEPICTED OR NOT DEPICTED. THE OWNER OR ITS REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR, PRIOR TO COMMENCEMENT OF CONSTRUCTION, SHALL NOTIFY ALL UTILITIES PRIOR TO COMMENCING WORK TO ALLOW SUFFICIENT TIME TO LOCATE AND MARK THE LOCATION OF ALL BURIED UTILITIES. CONTRACTOR SHALL NOTIFY "DIG-SAFE" (1-888-344-7233) AT LEAST 72 HOURS BEFORE EXCAVATING. A COPY OF THE DIGSAFE PROJECT REFERENCE NUMBER(S) SHALL BE GIVEN TO THE OWNER PRIOR TO THE EXCAVATION. REPAIR OF ANY DAMAGED UTILITY WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND INCIDENTAL TO THE CONTRACT.
8. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION SHALL BE FURNISHED IN WRITING BY THE CONTRACTOR TO THE ENGINEER FOR THE RESOLUTION OF THE CONFLICT. THE CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.
9. EXISTING RIGHT-OF-WAY AND PROPOSED EASEMENT LINES REPRESENT THE LIMIT OF WORK EXCEPT WHERE A LIMIT OF WORK LINE IS SHOWN ELSEWHERE ON THE PLANS. COORDINATE WITH OWNER IF NOTIFICATION OR COORDINATION WITH ADJACENT PROPERTY OWNERS IS REQUIRED.
10. COORDINATE CONSTRUCTION ACTIVITIES WITH THE TOWN OF TEWKSBURY DEPARTMENT OF PUBLIC WORKS, TEWKSBURY ENGINEERING DEPARTMENT, POLICE DEPARTMENT, FIRE DEPARTMENT, EMERGENCY MANAGEMENT, MASSDOT, UTILITY COMPANIES, AND THE ENGINEER.
11. ENSURE CONSTRUCTION OPERATIONS DO NOT INTERFERE WITH THE TOWN OF TEWKSBURY'S ABILITY TO MEET DEMAND FOR WATER AND SEWER SERVICE. COORDINATE ANY SERVICE RESTRICTIONS OR INTERRUPTIONS WITH THE TOWN'S DEPARTMENT OF PUBLIC WORKS, TEWKSBURY ENGINEERING DEPARTMENT, AND ENGINEER. PROVIDE A MINIMUM OF TWO WEEKS NOTICE PRIOR TO ANY REQUIRED SHUT DOWNS. TEMPORARY SEWAGE BYPASS SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 01 57 31 AND COORDINATED WITH THESE DRAWINGS.
12. CONTRACTOR IS ADVISED THAT, DUE TO I/I CHARACTERISTICS, FLOWS TO THE PUMP STATION MAY INCREASE DURING RAIN EVENTS. COORDINATE WORK AND TEMPORARY SEWAGE BYPASSING WITH EXPECTED HIGH FLOWS, AS NEEDED.
13. CONTRACTOR SHALL SCHEDULE WORK SO THAT EXISTING SEWERS CAN STAY IN USE AS LONG AS POSSIBLE TO MINIMIZE NECESSARY BYPASS PUMPING. CONTRACTOR SHALL PROVIDE BYPASS PUMPING AS PART OF THE WORK.
14. ALL NEW PIPING AND FITTINGS SHALL BE PAINTED IN ACCORDANCE WITH SECTION 09 90 00.
15. MAINTAIN TRAFFIC IN A SAFE MANNER AT ALL TIMES DURING CONSTRUCTION. MAKE EVERY EFFORT TO MAINTAIN CONTINUOUS TRAFFIC FLOW (MINIMUM OF ONE LANE) DURING CONSTRUCTION. DETOURS AND ROAD CLOSINGS REQUIRE COORDINATION AND CONSENT FROM TEWKSBURY POLICE & FIRE DEPARTMENTS, DEPARTMENT OF PUBLIC WORKS, AND TEWKSBURY ENGINEERING DEPARTMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING TRAFFIC MANAGEMENT PLAN IN ACCORDANCE WITH THE REQUIREMENTS OF THE SAFETY OFFICER AND POLICE DEPARTMENT.
16. RESTORE ALL AREAS DISTURBED BY CONTRACTOR'S OPERATIONS TO ORIGINAL FINISH (GRAVEL, PAVEMENT, GRASS, ETC.) UNLESS OTHERWISE NOTED ON THE DRAWINGS. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE. AREAS DISTURBED OUTSIDE THE LIMITS OF PROPOSED WORK AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL RECEIVE 6" INCHES LOAM AND SEED AT NO COST TO THE OWNER.
17. REPLACE ALL EXISTING CURBS IN KIND. IF CURBING DOES NOT EXIST ON AN EXISTING PAVED ROAD, NO CURBING SHALL BE CONSTRUCTED, UNLESS OTHERWISE SHOWN ON THE DRAWINGS. ALL CURB DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND AND SHALL CONFORM TO MASSACHUSETTS HIGHWAY AND LOCAL SPECIFICATIONS.
18. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED PAVEMENTS, EXISTING ELEVATIONS WHERE EXCAVATIONS WILL REQUIRE PAVEMENT TO BE REPLACED, AND EXISTING GROUND ELEVATIONS ADJACENT TO PLANTINGS AND PROPOSED EQUIPMENT PADS.
19. CONTRACTOR SHALL PROVIDE AND INSTALL TREE PROTECTION, ROAD SIDE PROTECTION, AS REQUIRED TO COMPLETE THE WORK. PLAN SHALL BE PRESENTED TO OWNER PRIOR TO START OF CONSTRUCTION FOR APPROVAL.
20. TAKE ALL NECESSARY PRECAUTIONS TO PREVENT EQUIPMENT FLUIDS OR WASTEWATER FROM REACHING ANY WATER COURSE OR RESOURCE AREA. ANY RELEASE OR FLUID DISCHARGED INADVERTENTLY SHALL BE REPORTED AND REMEDIATED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.
21. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE ENGINEER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN. CONTRACTOR SHALL COMPLY WITH APPLICABLE LAWS AND REGULATIONS RELATING TO HEALTH AND SAFETY.
22. DAMAGE TO ALL EXISTING SURFACE FEATURES RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
23. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF-SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS, AND CORRECTIVE ACTION IF REQUIRED.
24. CONTRACTOR IS REQUIRED TO BACKFILL TRENCHES OR SECURE WITH METAL PLATES DAILY AND PAVE ALL TRENCHES BY END OF DAY EACH FRIDAY. NO OPEN TRENCHES SHALL BE LEFT UNATTENDED. STEEL PLATES SHALL BE RECESSED BETWEEN NOVEMBER 1ST AND APRIL 1ST.
25. THE CONTRACTOR SHALL MANAGE AND LEGALLY DISPOSE OFF-SITE ALL EXCESS EXCAVATED MATERIALS, INCLUDING, BUT NOT LIMITED TO, SOIL, ROCK, BOULDERS, WATER, DEMOLITION WASTE, AND DEBRIS THAT CANNOT BE REUSED ON-SITE.
26. PRIOR TO CONSTRUCTION, A PRECONSTRUCTION MEETING SHALL BE HELD AT THE PROJECT SITE WITH THE CONTRACTOR, ENGINEER, AND OWNER TO REVIEW THE CONSTRUCTION SCHEDULE AND CRITICAL ASPECTS OF THE SITE WORK. AT THAT TIME, THE SITE CONTRACTOR SHALL PROVIDE COPIED OF A DETAILED CONSTRUCTION SCHEDULE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE A MUTUALLY AGREEABLE TIME FOR THE PRECONSTRUCTION MEETING.
27. CONTRACTOR IS RESPONSIBLE FOR ALL SNOW REMOVAL AND WINTER MAINTENANCE OR ACCESS PATHS WITHIN THE LIMIT OF WORK, AS WELL AS WITHIN TEMPORARY PARKING AREAS PROVIDED AS PART OF THE PROJECT.
28. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT. CONTRACTOR SHALL NOT ALLOW DEBRIS OR SEDIMENT TO ENTER THE SEWER OR STORMWATER SYSTEM.
29. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM TIME BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED TO PREVENT EROSION.
30. SAWCUTS IN EXISTING PAVEMENT SHALL BE SMOOTH AND STRAIGHT. EXISTING PAVEMENT SHALL BE SAWCUT AND BUTTED TO THE NEW PAVEMENT. NO FEATHERING OF PAVEMENT WILL BE PERMITTED.
31. WORK WITHIN PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH APPLICABLE LOCAL AND STATE REQUIREMENTS.
32. ACCESS TO ALL STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.
33. NATURAL GAS MAINS AND SERVICES SHOWN ON THE PLANS ARE BASED ON AVAILABLE RECORD DRAWINGS. SHOULD ANY NATURAL GAS INFRASTRUCTURE BE DAMAGED OR FOUND TO BE COMPROMISED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY STOP CONSTRUCTION AND NOTIFY THE TOWN OF TEWKSBURY ENGINEERING DEPARTMENT EMERGENCY NUMBER (978-851-7373) AND NATIONAL GRID EMERGENCY NUMBER (800-548-8000).
34. THE WORD "DEMOLISH" SHALL IMPLY THE FULL REMOVAL AND PROPER DISPOSAL OF THE ITEM AND ANY APPURTENANT ITEMS, AS NOTED, OR AS DIRECTED BY THE OWNER OR THEIR REPRESENTATIVE. THE OWNER RETAINS THE RIGHT TO KEEP ANY ITEM NOTED FOR REMOVAL OR DEMOLITION AT THE REQUEST OF THE OWNER OR THEIR REPRESENTATIVE.
35. ALL SOIL AND EROSION CONTROLS SHALL BE PLACED PRIOR TO ANY CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL NOTIFY THE ENGINEER AND OWNER AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
36. EROSION CONTROL MEASURES SHALL BE INSPECTED AT A MINIMUM FREQUENCY OF ONCE PER WEEK AS WELL AS BEFORE AND AFTER EVERY RAIN EVENT GREATER THAN 0.5 INCHES. ANY NECESSARY REPAIRS OR REPLACEMENT SHALL BE PERFORMED BY THE CONTRACTOR.
37. DUST SHALL BE CONTROLLED AS NECESSARY IN ACCORDANCE WITH STATE AND LOCAL GUIDELINES.

ABBREVIATIONS

ACI	AMERICAN CONCRETE INSTITUTE
ADJ.	ADJUSTABLE
ALT	ALTERNATE
ALUM.	ALUMINUM
APPROX.	APPROXIMATE
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS
BC	BITUMINOUS CURB
BLDG.	BUILDING
BOT	BOTTOM
C. TO C.	CENTER TO CENTER
CB	CATCH BASIN
CC	CONCRETE CURB
CCTV	CLOSED-CIRCUIT TELEVISION INSPECTION
CDF	CONTROLLED DENSITY FILL
CI	CAST IRON PIPE
℄	CENTER LINE
CONC.	CONCRETE
CONT.	CONTINUOUS
D	DRAIN
DI	DUCTILE IRON
DIA.	DIAMETER
Ø	DIAMETER
DS	DOWNSTREAM
E	EASTING, ELECTRIC
ELECT.	ELECTRICAL
EL.	ELEVATION
FM	FORCE MAIN
FT.	FOOT
G	GAS
GS	GAS SERVICE
H	HEIGHT
HOR.	HORIZONTAL
HP	HIGH POINT
I.D.	INSIDE DIAMETER
IN	INCH
INV.	INVERT
L	LENGTH
LB	POUND
LF	LINEAR FEET
MASSDOT	MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
MAX.	MAXIMUM
MECH.	MECHANICAL
MFG.	MANUFACTURERS
MH	MANHOLE
MIN.	MINIMUM
MW	MONITORING WELL
#	NUMBER
N	NORTHING
NO.	NUMBER
NOM.	NOMINAL
N.T.S.	NOT TO SCALE
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
℄	PROPERTY LINE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
ROW	RIGHT OF WAY
RREX	REMOVE AND REPLACE EXISTING
S	SEWER, SLOPE
SS	SANITARY SEWER
SCH.	SCHEDULE
SECT. .	SECTION
SHT.	SHEET
SSMH	SANITARY SEWER MANHOLE
STA.	STATION
SQ.	SQUARE
TOC.	TOP OF CONCRETE
TP	TEST PIT
TYP.	TYPICAL
UGE	UNDERGROUND ELECTRIC
UNK	UNKNOWN
USGS	UNITED STATES GEOLOGICAL SURVEY
VERT.	VERTICAL
W	WATER OR WIDTH
W/	WITH
WS	WATER SERVICE

CIVIL SYMBOLS

DESCRIPTION	EXISTING	PROPOSED
SANITARY SEWER MANHOLE	○	◯
CATCH BASIN	⊞	⊜
CONIFEROUS TREE	✲	✲
PRIVACY FENCE		————
LIMIT OF PAVING		- - - - - - - - - -

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

PE SEAL:

COMMONWEALTH OF MASSACHUSETTS
JASON D. JANCAITIS
CIVIL
No. 46814
REGISTERED PROFESSIONAL ENGINEER

Jason D. Jancaitis

Digitally signed by Jason D. Jancaitis
DN: CN=JS, E=jjancaitis@woodardcurran.com, O=Woodard & Curran, Inc.", OU=Jason D. Jancaitis
Reason: I agree to the terms defined by the placement of my signature on this document.
Contact info: jjancaitis@woodardcurran.com
Date: 2025.01.22 17:00:02-05'00'

ISSUED FOR BID - NOT FOR CONSTRUCTION

CLIENT INFO:

TOWN OF TEWKSBURY, MASSACHUSETTS

DEVONSHIRE ROAD PUMP STATION IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0235334.00
DATE:	JANUARY 2025
SCALE:	N/A
DESIGNED BY:	JF
DRAWN BY:	CB
CHECKED BY:	MC
FILENAME:	023533400-G-001.dwg

DRAWING TITLE:

GENERAL

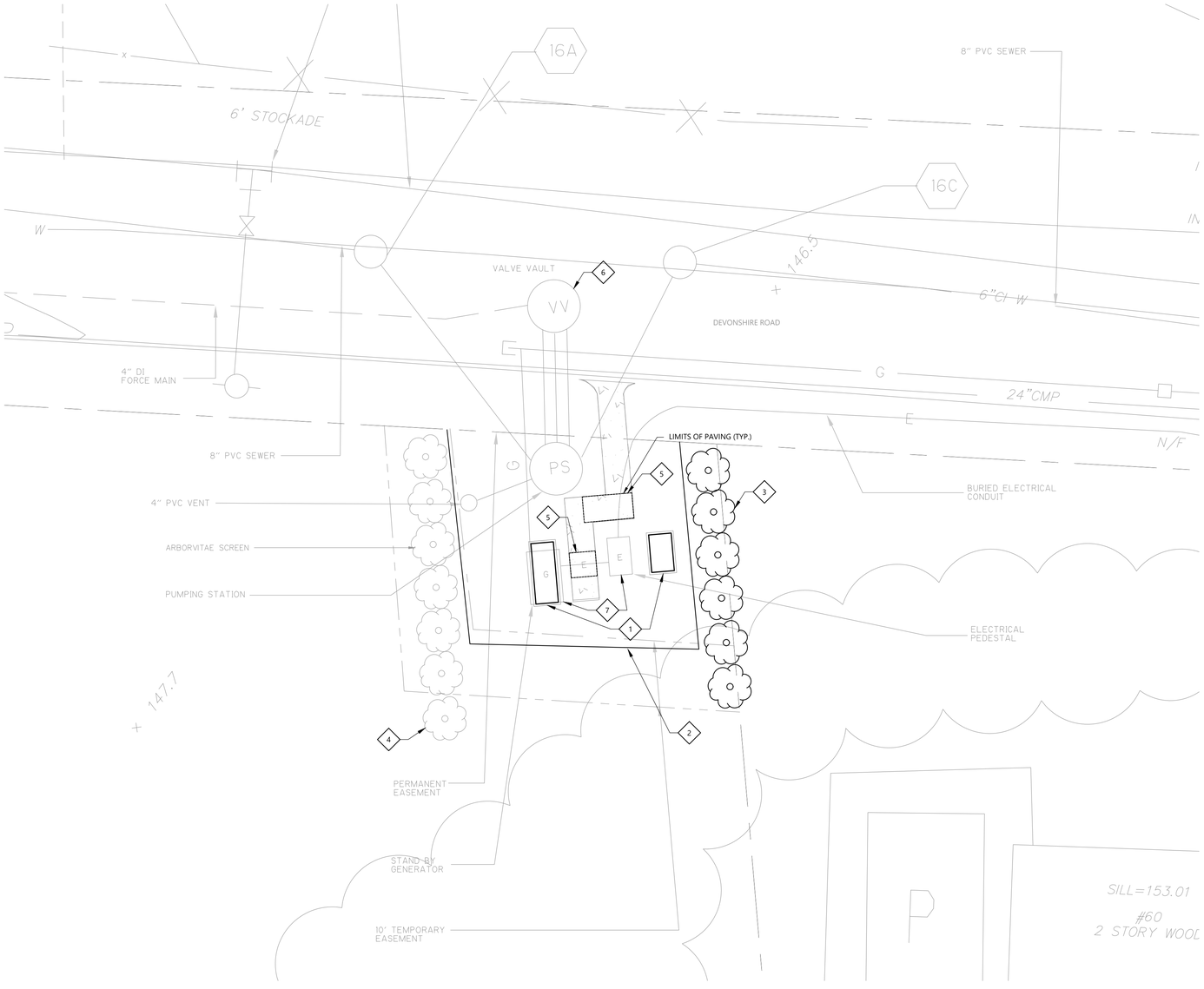
GENERAL NOTES, LEGEND & ABBREVIATIONS

DRAWING NO:

G-001

\\woodardcurran.net\shared\Projects\0235334.00 Tewksbury MA Devonshire Pump Station Upgrades\wip\Drawings\General\023533400-G-001.dwg, Jan 22, 2025 - 2:08pm JFORTIN

22x34



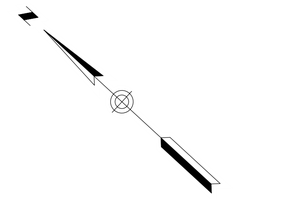
SHEET GENERAL NOTES

1. ALL ITEMS SHOWN WITH LIGHT DESIGNATION INDICATES EXISTING EQUIPMENT. ALL ITEMS SHOWN WITH BOLD DESIGNATION INDICATES DEMOLISHED, PROPOSED, OR RELOCATED EQUIPMENT, UNLESS SPECIFICALLY INDICATED OTHERWISE.
2. EQUIPMENT SHOWN ON THIS SHEET FOR DIAGRAMMATICAL PURPOSES ONLY. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS WITH ENGINEER & OWNER IN THE FIELD PRIOR TO PERFORMING WORK.
3. EQUIPMENT DIMENSIONS AND LOCATIONS SHALL BE FIELD VERIFIED.
4. COORDINATE ALL WORK ON THIS SHEET WITH OTHER DISCIPLINES.
5. LOCATION OF EXISTING ARBORVITAE SCREEN IS APPROXIMATE AND SHALL BE VERIFIED BY CONTRACTOR.
6. COORDINATE WITH DIGSAFE PRIOR TO ANY EXCAVATION OR CONSTRUCTION BELOW GRADE.
7. NO PAVEMENT REMOVAL AND RESTORATION OUTSIDE OF THE LIMITS OF PAVING SHOWN SHALL BE PERFORMED WITHOUT APPROVED BY ENGINEER IN WRITING.

XX SHEET KEYNOTES

1. PROVIDE EQUIPMENT PADS FOR GENERATOR AND ELECTRICAL ENCLOSURE IN ACCORDANCE WITH THE EQUIPMENT PAD GENERAL NOTES AND DETAILS 1 AND 2 ON C-901. COORDINATE WITH REQUIREMENTS SPECIFIED IN THE ELECTRICAL DRAWINGS.
2. PROVIDE A PRIVACY FENCE ALONG THE PERIMETER OF THE PUMP STATION, AS SHOWN. FENCE POSTS SHALL BE STAKED OUT PRIOR TO CONSTRUCTION. CONFIRM FENCE LOCATION WITH OWNER PRIOR TO INSTALLATION. REFER TO DETAIL 1 ON SHEET C-902.
3. PROVIDE AN ARBORVITAE SCREEN IN ACCORDANCE WITH THE PLANTING SCHEDULE ON THIS SHEET. PLANTINGS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 32 90 00.
4. PROTECT THE EXISTING ARBORVITAES ON THE NORTHEAST SIDE OF THE STATION. TREES DAMAGED AS A RESULT OF THE WORK SHALL BE REPLACED WITH NEW TREES MATCHING THE VARIETY AND HEIGHT AT NO ADDITIONAL COST TO THE OWNER. REFER TO DETAIL 3 ON SHEET C-902.
5. RESTORE PAVEMENT THAT IS CUT, EXCAVATED, OR REMOVED AS A RESULT OF THE WORK TO MATCH THE EXISTING GRADE PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING GRADE PRIOR TO CONSTRUCTION (TYP.). SEE DETAIL 6 ON C-902.
6. PROVIDE TEMPORARY SEWAGE BYPASSING IN ACCORDANCE WITH SECTION 01 57 31. EXISTING BYPASS CONNECTION IS LOCATED WITHIN THE VALVE VAULT.
7. DEMOLISH EXISTING CONCRETE EQUIPMENT PADS FOR THE GENERATOR AND ELECTRICAL ENCLOSURE.

PLANTING SCHEDULE	
ESTIMATED NO. OF TREES	6
LOCATION	APPROXIMATELY AS SHOWN
TYPE	ARBORVITAE
VARIETY	GREEN GIANT
PLANTING HEIGHT	5 FT
REFERENCE SPECIFICATION	32 90 00



10' 0 10' 20'

BAR SCALE
1" = 10'
CHECK GRAPHIC SCALE BEFORE USING

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

PE SEAL:

COMMONWEALTH OF MASSACHUSETTS
JASON D. JANCAITIS
CIVIL
No. 46814
REGISTERED PROFESSIONAL ENGINEER

Jason D. Jancaitis

Digitally signed by Jason D. Jancaitis
DN: CN=JD, E=jjancaitis@woodardcurran.com, O=Woodard & Curran, Inc.", CN=Jason D. Jancaitis
Reason: I agree to the terms defined by the placement of my signature on this document.
Contact Info: jjancaitis@woodardcurran.com
Date: 2025.01.22 17:00:03-05'00'

ISSUED FOR BID - NOT FOR CONSTRUCTION

CLIENT INFO:

TOWN OF TEWKSBURY, MASSACHUSETTS

DEVONSHIRE ROAD PUMP STATION IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0235334.00
DATE:	JANUARY 2025
SCALE:	N/A
DESIGNED BY:	JF
DRAWN BY:	CB
CHECKED BY:	MC
FILENAME:	023533400-C-101.dwg

DRAWING TITLE:

CIVIL SITE PLAN

DRAWING NO:

C-101

\\woodardcurran.net\shared\Projects\023533400 Tewksbury MA Devonshire Pump Station Upgrades\wip\Drawings\Civil\023533400-C-101.dwg, Jan 22, 2025 - 2:09pm JFORTIN

EQUIPMENT PAD GENERAL NOTES

A. SUBGRADE AND BACKFILL REQUIREMENTS:

1. REMOVE EXISTING TOPSOIL AND EXCAVATE THE EXISTING SOIL WITHIN THE PROPOSED BEARING ZONE OF SLAB-ON-GRADE TO THE FINAL SUBGRADE ELEVATION (4 FEET BELOW EXISTING GRADE). THE BEARING ZONE IS DEFINED BY A LINE PROJECTING ONE FOOT BEYOND THE BOTTOM EDGE OF PROPOSED SLAB-ON-GRADE AND EXTENDING DOWNWARD AND OUTWARD AT 45 DEGREES (1H:1V) DOWN TO 4 FEET BELOW EXISTING GRADE.
2. SUBGRADE SOILS SHALL BE PROOF-COMPACTED PRIOR TO FILL AND CONCRETE PLACEMENT WITH AT LEAST SIX PASSES OF A LARGE VIBRATORY PLATE COMPACTOR.
3. AREAS WITHIN FOUNDATION BEARING ZONE SHALL BE COMPACTED TO 95% OF ITS MAXIMUM DRY DENSITY AS DEFINED BY ASTM D1557.
4. SLAB-ON-GRADE SHALL BE CONSTRUCTED UPON A MINIMUM 12" OF 3/4" COMPACTED CRUSHED STONE. ALL CRUSHED STONE SHALL MEET THE SIEVE ANALYSIS BELOW. COMPACTED CRUSHED STONE SHALL BE WRAPPED IN FILTER FABRIC EQUAL TO MIRAF 160N. CRUSHED STONE SHALL BE COMPACTED WITH 3 TO 5 PASSES OF A VIBRATORY PLATE COMPACTOR.

SIEVE SIZE	PERCENT PASSING
1"	100
3/4"	90-100
1/2"	10-50
3/8"	0-20
NO 4	0-5

5. THE EXCAVATION NOT FILLED WITH CRUSHED STONE SHALL BE FILLED WITH GRAVEL BORROW BACKFILL THAT SHALL MEET THE FOLLOWING GRADATIONS:

SIEVE SIZE	PERCENT PASSING
1/2"	50-58
NO 4	40-75
NO 50	8-28
NO 200	0-10

B. GENERAL REINFORCED CONCRETE REQUIREMENTS:

1. COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS - 4500 PSI; AIR CONTENT 6 ± 1.5%; W/C RATIO 0.42 MAXIMUM; SLUMP 4" MAXIMUM AFTER ALL WATER HAS BEEN ADDED.
2. REINFORCEMENT: ASTM A615 GRADE 60.
3. CONCRETE DESIGN IS PER AMERICAN CONCRETE INSTITUTE "318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE."
4. REINFORCEMENT SHALL BE DETAILED, FABRICATED, AND PLACED AS PER ACI 315 DETAILING MANUAL.
5. ALL CONCRETE TESTING FOR TEMPERATURE, ENTRAINED AIR, SLUMP, AND COMPRESSIVE STRENGTH TEST CYLINDERS SHALL BE PAID FOR BY CONTRACTOR. CONTRACTOR SHALL COORDINATE AND SCHEDULE ALL CONCRETE PLACEMENTS WITH TESTING AGENCY AS REQUIRED TO PROVIDED FIELD TESTING SERVICES FOR EVERY CONCRETE PLACEMENT.
6. PROVIDE SACK-RUBBED FINISH PER SPECIFICATION 03 30 20 WHERE SPECIFICALLY INDICATED IN SPECIFICATIONS OR AS NOTED ON DRAWINGS.
7. CONCRETE CURE AND SEAL COMPOUND: PROVIDE THE FOLLOWING FOR HORIZONTAL AND VERTICAL EXPOSED TO VIEW CONCRETE SURFACES OF ALL EXTERIOR CONCRETE: CLEAR SILANE COATING EQUAL TO "CERTI-VEX GUARD CLEAR" BY CHEMMASTERS, A ONE-STOP CURE AND PENETRATING WATER REPELLENT SEALER MEETING ASTM C1315, TYPE 1, CLASS B, NCHRP-244. APPLY (2) COATS IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
8. SUBMIT A PLAN TO ENGINEER FOR APPROVAL SHOWING ALL PROPOSED CONSTRUCTION JOINT AND CONTROL JOINT LOCATIONS AND PLACEMENT SEQUENCE FOR ALL CONCRETE WORK PRIOR TO CONSTRUCTION.

B. DESIGN LOADS PER 780 CMR, NINTH EDITION (MASS STATE BUILDING CODE & IBC 2015, AS AMENDED):

1. SNOW LOADS PER ASCE 7-10:
   GROUND SNOW LOAD, PG = 50 PSF
   IMPORTANCE FACTOR, IS = 1.1
2. WIND LOADS PER ASCE 7-10:
   BASIC WIND SPEED, V = 135 MPH
   EXPOSURE CATEGORY, EXP = C
   TOPOGRAPHIC FACTOR, KZT = 1.0
   IMPORTANCE FACTOR, IW = 1.0
   WIND DIRECTIONALITY FACT, KD = 0.9
   VELOCITY PRESSURE EXPOSURE COEFFICIENT, KZ = 0.85
3. SEISMIC LOADS PER ASCE 7-10:
   S_S = 0.237g S_1 = 0.074g
   SOIL SITE CLASS = "D" (ASSUMED)
   OCCUPANCY CATEGORY = III
   SDS = 0.253 SD1 = 0.118
   SEISMIC DESIGN CATEGORY = "B"
4. ELECTRICAL CABINET, GENERATOR & COMPONENTS:
   SEE EQUIPMENT PAD SCHEDULE, THIS SHEET.

MINIMUM REINFORCING BAR SPLICE LENGTHS (IN.) fy=60,000 f'c=4,000		
BAR SIZE	TOP BARS	OTHER BARS
4	20	16
5	25	19
6	29	23
7	43	33
8	49	37
9	60	46
10	74	57
11	89	68

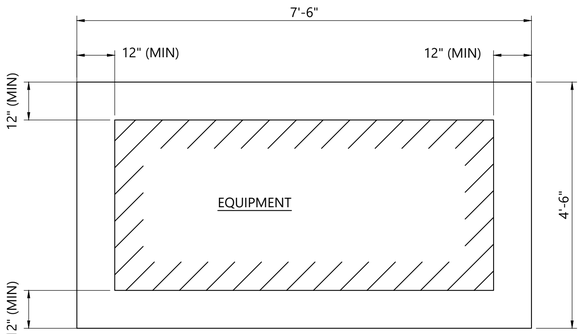
NOTES:

A. TABLE IS BASED ON NORMAL WEIGHT CONCRETE, UNCOATED BARS, CLEAR SPACING NOT LESS THAN FOUR BAR DIAMETERS, AND COVER NOT LESS THAN TWO BAR DIAMETERS.

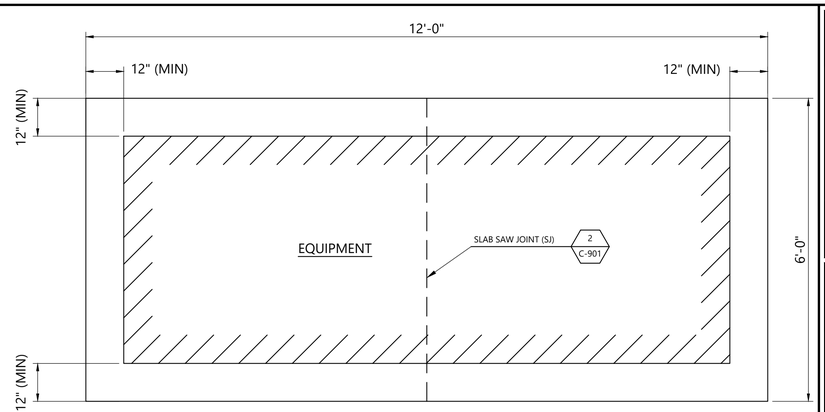
B. WHERE SPACING BETWEEN BARS IS LESS THAN FOUR BAR DIAMETERS, OR CLEAR COVER IS LESS THAN TWO BAR DIAMETERS, INCREASE SPLICE LENGTHS SHOWN BY 67%.

C. TOP BARS = HORIZONTAL SLAB BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BARS. NOT APPLICABLE TO HORIZONTAL WALL REINFORCING.

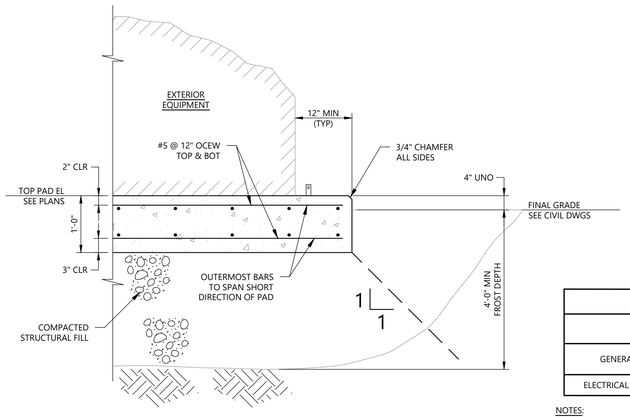
D. FOR CONCRETE COMPRESSIVE STRENGTH, F'c, OTHER THAN 4,000 PSI, MULTIPLY THE VALUES BY THE SQUARE ROOT OF 4,000 DIVIDED BY THE SQUARE ROOT OF F'c.



ELECTRICAL PAD PLAN VIEW



GENERATOR PAD PLAN VIEW



SECTION VIEW

NOTES

1. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR EQUIPMENT LOCATIONS, QUANTITIES, AND LAYOUT
2. PAD SHALL PROJECT A MINIMUM OF 12-INCH BEYOND MECHANICAL EQUIPMENT FOOTPRINT, UNLESS NOTED OTHERWISE. FOR ANCHOR RODS 5/8" DIA OR LESS, PAD PROJECTIONS MAY BE REDUCED FROM 12-INCH TO 9-INCH
3. TOP OF PAD SHALL BE LEVEL WITHIN 1/8-INCH
4. PROVIDE SACK-RUBBED FINISH TO ALL EXPOSED SIDES OF EQUIPMENT PAD AND A TROWEL FINISH TO THE TOP SURFACE
5. PROVIDE COMPACTED STRUCTURAL FILL UNDER PAD FOOTPRINT TO FROST DEPTH TO PREVENT FROST HEAVE. IF OVER-EXCAVATION IS NOT FEASIBLE, PROVIDE 2-INCH RIGID INSULATION UNDER ENTIRE PAD AND EXTENDING A MINIMUM OF 2-FT BEYOND ALL SIDES OF THE EQUIPMENT PAD. PLACE CONCRETE DIRECTLY ON TOP OF RIGID INSULATION LAYER
6. PROVIDE SAWED JOINT (SJ) IN EQUIPMENT PADS, IF SHOWN AND NOTED ON PLANS.
8. ANCHOR RODS SHALL BE 316 AISI STAINLESS STEEL, UNLESS NOTED OTHERWISE
9. PRIOR TO EQUIPMENT INSTALLATION, APPLY CURE AND SEAL COMPOUND OR WATERPROOFING TO EQUIPMENT PAD SURFACES

EQUIPMENT PAD SCHEDULE*

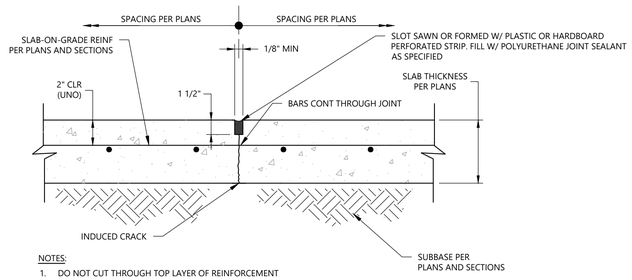
	GENERATOR SIZE	WIDTH	LENGTH	THICKNESS	REBAR SIZE	OPERATING WEIGHT	DRY WEIGHT
GENERATOR	50 KW	6'-0"	12'-0"	12"	#5	5,402 LBS	3,644 LBS
ELECTRICAL CABINET	N/A	4'-6"	7'-6"	12"	#5	500 LBS	N/A

NOTES:

1. DRY WEIGHT INCLUDES THE WEIGHT OF THE GENERATOR, THE FUEL TANK, AND THE ENCLOSURE.
2. OPERATING WEIGHT INCLUDES THE WEIGHT OF THE GENERATOR, THE FUEL TANK, THE ENCLOSURE, AND THE DIESEL FUEL.

1 EQUIPMENT PADS

NOT TO SCALE

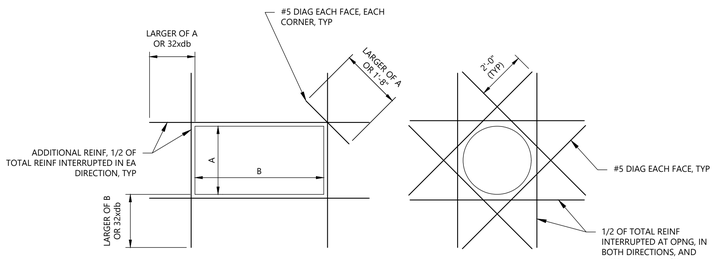

SPACING PER PLANS
SPACING PER PLANS
SLAB-ON-GRADE REINF PER PLANS AND SECTIONS
1/8" MIN
SLOT SAWN OR FORMED W/ PLASTIC OR HARDBOARD PERFORATED STRIP. FILL W/ POLYURETHANE JOINT SEALANT AS SPECIFIED
2" CLR (UNO)
1 1/2"
BARS CONT THROUGH JOINT
SLAB THICKNESS PER PLANS
INDUCED CRACK
SUBBASE PER PLANS AND SECTIONS

NOTES:

1. DO NOT CUT THROUGH TOP LAYER OF REINFORCEMENT
2. JOINT SHALL BE SAWN WITHIN 4 TO 12 HOURS AFTER PLACEMENT

2 SLAB SAWED JOINT (SJ)

NOT TO SCALE


LARGER OF A OR 32xdb
#5 DIAG EACH FACE, EACH CORNER, TYP
LARGER OF A OR 1'-0"
2'-0" (TYP)
ADDITIONAL REINF, 1/2 OF TOTAL REINF INTERRUPTED IN EA DIRECTION, TYP
A
B
#5 DIAG EACH FACE, TYP
LARGER OF B OR 32xdb
1/2 OF TOTAL REINF INTERRUPTED AT OPNG, IN BOTH DIRECTIONS, AND EXTENDED A LENGTH EQUAL TO THE DIAMETER OF THE OPNG, BUT NOT LESS THAN 24 INCHES, PAST THE FACE OF THE OPNG, TYP

NOTES:

1. THESE DETAILS APPLY EXCEPT WHERE SHOWN OTHERWISE
2. ADDITIONAL BARS NOT REQUIRED WERE EDGE OF OPENING IS WITHIN 6 INCHES OF A BEAM OR WALL, AND PARALLEL THERETO
3. PROVIDE HOOKED BAR WHERE EXTENSION SHOWN IS NOT POSSIBLE
4. FOR OPENING AT OR NEAR BASE OF WALL, ADDITIONAL DOWELS ARE REQUIRED AS INDICATED

3 REINFORCEMENT AT OPENINGS DETAIL

NOT TO SCALE

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

PE SEAL:

COMMONWEALTH OF MASSACHUSETTS
JASON D. JANCAITIS
CIVIL
No. 46814
REGISTERED PROFESSIONAL ENGINEER

Jason D. Jancaitis

Digitally signed by Jason D. Jancaitis
DN: C=US, E=jjancaitis@woodardcurran.com, O="Woodard & Curran, Inc.", CN=Jason D. Jancaitis
Reason: I agree to the terms defined by the placement of my signature on this document.
Contact Info: jjancaitis@woodardcurran.com
Date: 2025.03.22 17:00:04-05'00'

ISSUED FOR BID - NOT FOR CONSTRUCTION

CLIENT INFO:

TOWN OF TEWKSBURY, MASSACHUSETTS

DEVONSHIRE ROAD PUMP STATION IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0235334.00
DATE:	OCTOBER 2024
SCALE:	NO SCALE
DESIGNED BY:	WEJC
DRAWN BY:	WEJC
CHECKED BY:	RGN
FILENAME:	023533400-C -901.dwg

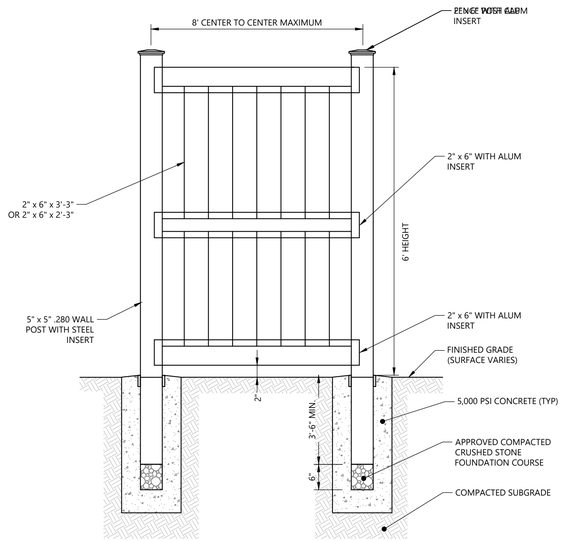
DRAWING TITLE:

CIVIL
CIVIL DETAILS-1

DRAWING NO:

C-901

\\woodardcurran.net\shared\Projects\0235334.00 Tewksbury MA Devonshire Pump Station Upgrades\wip\Drawings\Civil\023533400-C -901.dwg, Jan 22, 2025 - 2:09pm JFORTIN

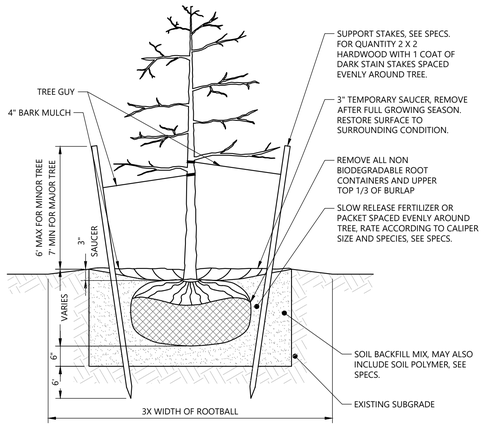

8' CENTER TO CENTER MAXIMUM
FENCE POST CAP INSERT
2" x 6" WITH ALUM INSERT
2" x 6" x 3'-3" OR 2" x 6" x 2'-3"
6' HEIGHT
5" x 5" .280 WALL POST WITH STEEL INSERT
2" x 6" WITH ALUM INSERT
FINISHED GRADE (SURFACE VARIES)
2"
3'-6" MIN.
5,000 PSI CONCRETE (TYP)
6"
APPROVED COMPACTED CRUSHED STONE FOUNDATION COURSE
COMPACTED SUBGRADE

1 VINYL PRIVACY FENCE

NOT TO SCALE

NOTES:

1. FENCING PRODUCT SHALL BE A VINYL PRIVACY FENCE EQUIVALENT LEVEL OF QUALITY: AUGUSTA MODEL # PWPR-3R-8X6.
2. FENCING PANELS, POSTS, CAPS, AND ALL APPURTENANCES SHALL BE FROM THE SAME MANUFACTURER.
3. PANEL SHALL BE MINIMUM THICKNESS OF 1.5".
4. FENCE MUST HAVE INTEGRAL WATER RESISTANCE AND RATED FOR UV PROTECTION.
5. FENCE COLOR/FINISH SHALL BE WHITE.
6. FENCE SHALL INCLUDE 3 INTEGRAL ALUMINUM REINFORCED RAILS.
7. FENCE COMPONENTS SHALL BE INSPECTED FOR DAMAGE PRIOR TO INSTALLATION. DAMAGED COMPONENTS SHALL BE REPLACED.
8. FENCE POSTS SHALL BE STAKED OUT PRIOR TO CONSTRUCTION FOR OWNER AND ENGINEER APPROVAL. CONTRACTOR SHALL COORDINATE WITH THE OWNER TO VERIFY PROPERTY LINES.
9. CONTRACTOR SHALL COORDINATE WITH DIGSAFE TO AVOID CONFLICTS WITH EXISTING UTILITIES.

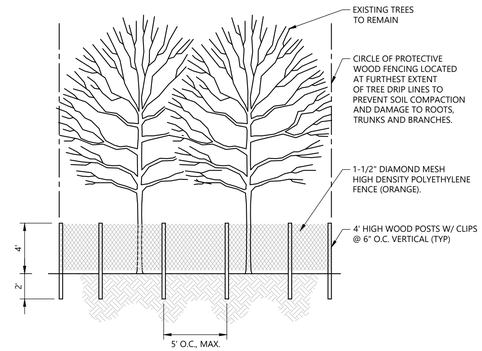

TREE GUY
4" BARK MULCH
6" MAX FOR MINOR TREE
7" MIN FOR MAJOR TREE
3" SAUCER
VARIES
6"
6"
3X WIDTH OF ROOTBALL
SUPPORT STAKES, SEE SPECS. FOR QUANTITY 2 X 2 HARDWOOD WITH 1 COAT OF DARK STAIN STAKES SPACED EVENLY AROUND TREE.
3" TEMPORARY SAUCER, REMOVE AFTER FULL GROWING SEASON. RESTORE SURFACE TO SURROUNDING CONDITION.
REMOVE ALL NON BIODEGRADABLE ROOT CONTAINERS AND UPPER TOP 1/3 OF BURLAP
SLOW RELEASE FERTILIZER OR PACKET SPACED EVENLY AROUND TREE, RATE ACCORDING TO CALIPER SIZE AND SPECIES, SEE SPECS.
SOIL BACKFILL MIX, MAY ALSO INCLUDE SOIL POLYMER, SEE SPECS.
EXISTING SUBGRADE

NOTES:

1. NEVER CUT OUT CENTRAL LEADER. PRUNE OUT BROKEN, DEAD, OR CONFLICTING BRANCHES.
2. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. TREE GUYS SHALL BE GUYING CHAIN, WEB STRAPPING OR TIE WIRE, RUBBER HOSE AND TURNBUCKLES.

2 TREE PLANTING AND STAKING

NOT TO SCALE

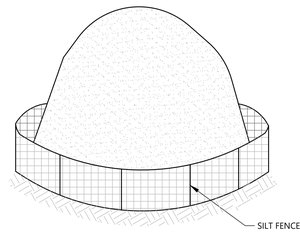

EXISTING TREES TO REMAIN
CIRCLE OF PROTECTIVE WOOD FENCING LOCATED AT FURTHEST EXTENT OF TREE DRIP LINES TO PREVENT SOIL COMPACTION AND DAMAGE TO ROOTS, TRUNKS AND BRANCHES.
1-1/2" DIAMOND MESH HIGH DENSITY POLYETHYLENE FENCE (ORANGE).
4' HIGH WOOD POSTS W/ CLIPS @ 6" O.C. VERTICAL (TYP)
4'
2'
5' O.C., MAX.

NOTES:

1. LOCATE FENCING AS SHOWN ON PLANS.
2. NO MATERIAL OR EQUIPMENT SHALL BE STORED OR STOCKPILED WITHIN THE AREA SURROUNDED BY TREE PROTECTION FENCING.
3. FENCE MUST REMAIN AND BE MAINTAINED THROUGHOUT ENTIRE BUILDING PHASES DURING WHICH CONSTRUCTION MAY AFFECT TREES.

3 TREE PROTECTION

NOT TO SCALE

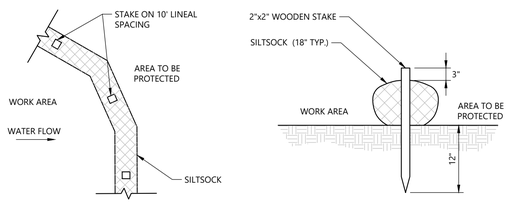


NOTES:

1. STOCKPILES SHALL BE SURROUNDED BY SILT FENCE.
2. STOCKPILES SHALL HAVE A MAXIMUM 2:1 (H:V) SIDE SLOPE.
3. REPAIR OR REPLACE DAMAGED SILT FENCE DUE TO CONSTRUCTION ACTIVITIES OR STOCKPILE MITIGATION.
4. STOCKPILE SHALL BE LOCATED IN AREAS AS SHOWN ON THE DRAWINGS OR APPROVED BY THE ENGINEER.

4 TEMPORARY SOIL STOCKPILE

NOT TO SCALE



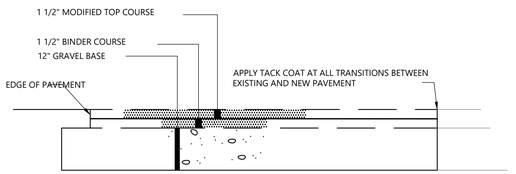
PLAN VIEW **SECTION**

NOTE:

1. WHEN STAKING IS NOT POSSIBLE, HEAVY CONCRETE BLOCKS SHALL BE USED BEHIND THE SEDIMENT CONTROL TO HELP STABILIZE DURING RAINFALL/RUNOFF EVENTS.

5 SILT SOCK

NOT TO SCALE


1 1/2" MODIFIED TOP COURSE
1 1/2" BINDER COURSE
12" GRAVEL BASE
EDGE OF PAVEMENT
APPLY TACK COAT AT ALL TRANSITIONS BETWEEN EXISTING AND NEW PAVEMENT

NOTES:

1. PROVIDE COMPACTION FOR GRAVEL AND PAVEMENT IN ACCORDANCE WITH THE SPECIFICATIONS.
2. INSTALL PAVING IN MAX. 2-INCH LIFTS.
3. PAVEMENT THICKNESS SHALL EQUAL DEPTH SPECIFIED OR MATCH EXISTING, WHICHEVER IS GREATER.

6 DRIVEWAY PAVEMENT DETIAL

NOT TO SCALE

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

PE SEAL:

COMMONWEALTH OF MASSACHUSETTS
JASON D. JANCAITIS
CIVIL
No. 46814
REGISTERED PROFESSIONAL ENGINEER

Jason D. Jancaitis

Digitally signed by Jason D. Jancaitis
DN: C=US, E=jjancaitis@woodardcurran.com, O="Woodard & Curran, Inc.", CN=Jason D. Jancaitis
Reason: I agree to the terms defined by the placement of my signature on this document.
Contact Info: jjancaitis@woodardcurran.com
Date: 2025.01.22 17:00:06-05'00'

ISSUED FOR BID - NOT FOR CONSTRUCTION

CLIENT INFO:

TOWN OF TEWKSBURY, MASSACHUSETTS

DEVONSHIRE ROAD PUMP STATION IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0235334.00
DATE:	JANUARY 2025
SCALE:	N/A
DESIGNED BY:	JF
DRAWN BY:	CB
CHECKED BY:	MC
FILENAME:	023533400-C -901.dwg

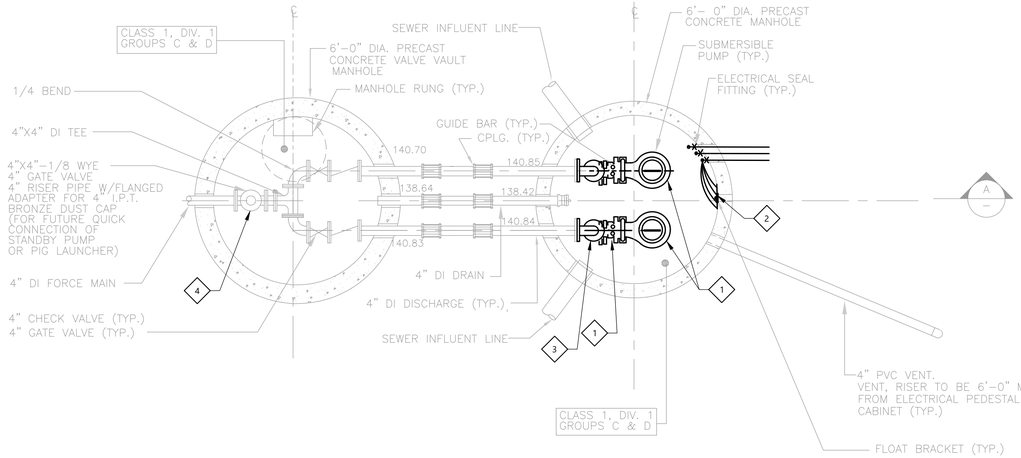
DRAWING TITLE:

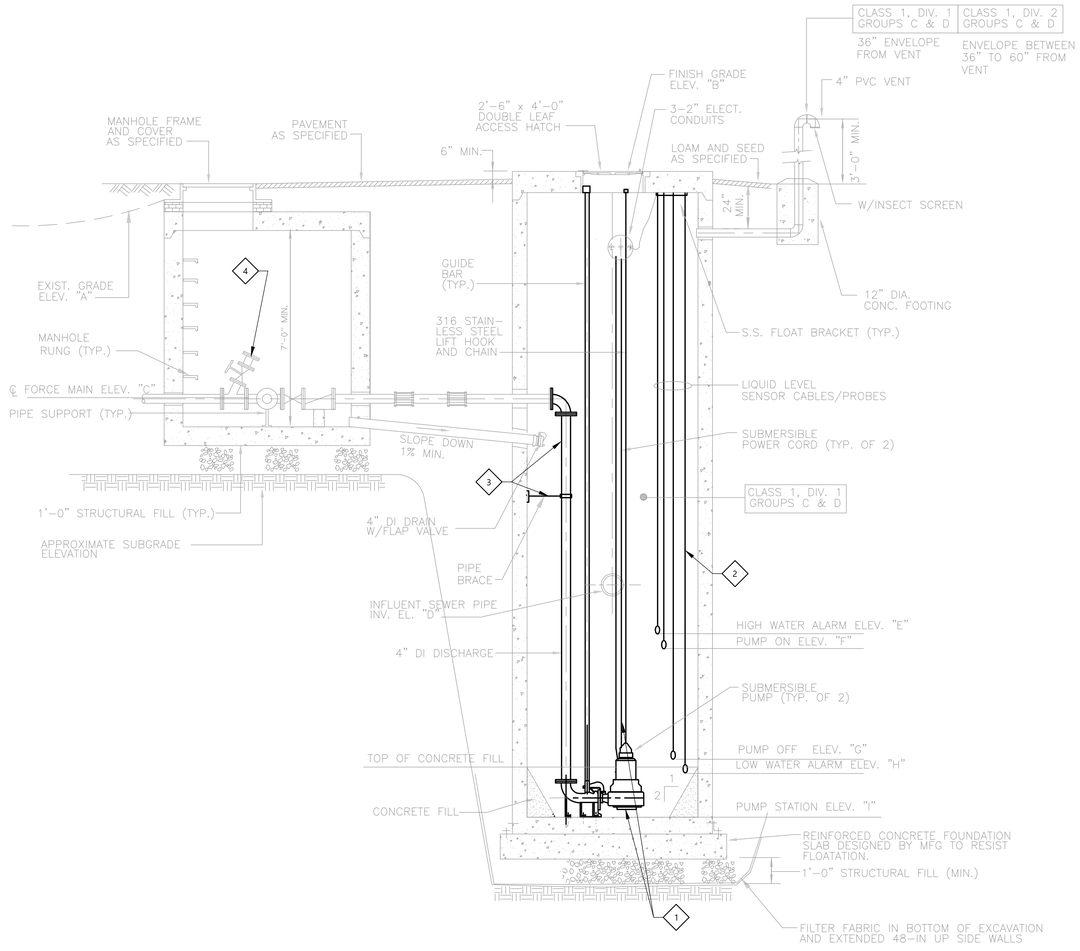
CIVIL
CIVIL DETAILS-2

DRAWING NO:

C-902

\\woodardcuran.net\shared\Projects\0235334.00 Tewksbury MA Devonshire Pump Station Upgrades\wip\Drawings\Civil\0235334400-C -901.dwg Jan 22, 2025 - 2:09pm JFORTIN




CLASS 1, DIV. 1 GROUPS C & D
CLASS 1, DIV. 2 GROUPS C & D
36" ENVELOPE FROM VENT
ENVELOPE BETWEEN 36" TO 60" FROM VENT
4" PVC VENT
FINISH GRADE ELEV. "B"
2'-6" x 4'-0" DOUBLE LEAF ACCESS HATCH
3-2" ELECT. CONDUITS
MANHOLE FRAME AND COVER AS SPECIFIED
PAVEMENT AS SPECIFIED
6" MIN.
LOAM AND SEED AS SPECIFIED
3'-0" MIN.
24" MIN.
W/INSECT SCREEN
GUIDE BAR (TYP.)
12" DIA. CONC. FOOTING
316 STAIN-LESS STEEL LIFT HOOK AND CHAIN
S.S. FLOAT BRACKET (TYP.)
EXIST. GRADE ELEV. "A"
MANHOLE RUNG (TYP.)
7'-0" MIN.
℄ FORCE MAIN ELEV. "C"
PIPE SUPPORT (TYP.)
LIQUID LEVEL SENSOR CABLES/PROBES
SLOPE DOWN 1% MIN.
SUBMERSIBLE POWER CORD (TYP. OF 2)
CLASS 1, DIV. 1 GROUPS C & D
1'-0" STRUCTURAL FILL (TYP.)
APPROXIMATE SUBGRADE ELEVATION
4" DI DRAIN W/FLAP VALVE
PIPE BRACE
INFLUENT SEWER PIPE INV. EL. "D"
HIGH WATER ALARM ELEV. "E"
PUMP ON ELEV. "F"
4" DI DISCHARGE
SUBMERSIBLE PUMP (TYP. OF 2)
TOP OF CONCRETE FILL
PUMP OFF ELEV. "G"
LOW WATER ALARM ELEV. "H"
2
1
CONCRETE FILL
PUMP STATION ELEV. "I"
REINFORCED CONCRETE FOUNDATION SLAB DESIGNED BY MFG TO RESIST FLOATATION.
1'-0" STRUCTURAL FILL (MIN.)
FILTER FABRIC IN BOTTOM OF EXCAVATION AND EXTENDED 48-IN UP SIDE WALLS
1
2
3
4

SHEET GENERAL NOTES

1. EXISTING CONDITIONS SHOWN HEREIN ARE BASED ON FIELD RECORD DRAWINGS FROM "SEWERAGE WORKS IMPROVEMENTS PHASE 9 CONTRACT NO. 31" DATED JANUARY 2007.
2. ALL ITEMS SHOWN WITH LIGHT DESIGNATION INDICATES EXISTING EQUIPMENT. ALL ITEMS SHOWN WITH BOLD DESIGNATION INDICATES DEMOLISHED, PROPOSED, OR RELOCATED EQUIPMENT, UNLESS SPECIFICALLY INDICATED OTHERWISE.
3. EQUIPMENT SHOWN ON THIS SHEET FOR DIAGRAMMATICAL PURPOSES ONLY. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS WITH ENGINEER & OWNER IN THE FIELD PRIOR TO PERFORMING WORK.
4. EQUIPMENT DIMENSIONS AND LOCATIONS SHALL BE FIELD VERIFIED.
5. COORDINATE ALL WORK ON THIS SHEET WITH OTHER DISCIPLINES. REFER TO AND COORDINATE WITH THE ELECTRICAL DRAWINGS FOR ELECTRICAL DEMOLITION.
6. ANY DAMAGED CONCRETE SHALL BE REPAIRED PRIOR TO INSTALLATION OF NEW EQUIPMENT IN ACCORDANCE WITH SECTION 03 01 05.

XX SHEET KEYNOTES

1. DEMOLISH THE TWO EXISTING PUMPS, PUMP MOUNTING EQUIPMENT, GUIDE RAILS, GUIDE RAIL SUPPORTS, AND ALL ASSOCIATED APPURTENANCES. COORDINATE WITH ELECTRICAL DRAWING AND NOTES ON SHEET ED-005.
2. DEMOLISH EXISTING FLOATS, FLOAT BRACKET, AND ASSOCIATED APPURTENANCES. COORDINATE WITH ELECTRICAL DRAWINGS AND NOTES ON SHEET ED-005.
3. DEMOLISH EXISTING DUCTILE IRON PIPE AND PIPE SUPPORTS/BRACES TO THE FIRST FLANGE (TYP.).
4. PROVIDE TEMPORARY SEWAGE BYPASSING IN ACCORDANCE WITH SECTION 01 57 31.

BAR SCALE
3/8" = 1'-0"
CHECK GRAPHIC SCALE BEFORE USING

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

PE SEAL:

COMMONWEALTH OF MASSACHUSETTS
JASON D. JANCAITIS
CIVIL
No. 46814
REGISTERED PROFESSIONAL ENGINEER

Jason D. Jancaitis

Digitally signed by Jason D. Jancaitis
DN: C=US, E=jjancaitis@woodardcurran.com, O=Woodard & Curran, Inc., CN=Jason D. Jancaitis
Reason: I agree to the terms defined by the placement of my signature on this document.
Contact Info: jjancaitis@woodardcurran.com
Date: 2025.01.22 17:00:07-05'00'

ISSUED FOR BID - NOT FOR CONSTRUCTION

CLIENT INFO:

TOWN OF TEWKSBURY, MASSACHUSETTS

DEVONSHIRE ROAD PUMP STATION IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0235334.00
DATE:	JANUARY 2025
SCALE:	AS NOTED
DESIGNED BY:	JF
DRAWN BY:	CB
CHECKED BY:	MC
FILENAME:	023533400-MD-101.dwg

DRAWING TITLE:
MECHANICAL
PUMP STATION DEMO PLAN AND SECTION

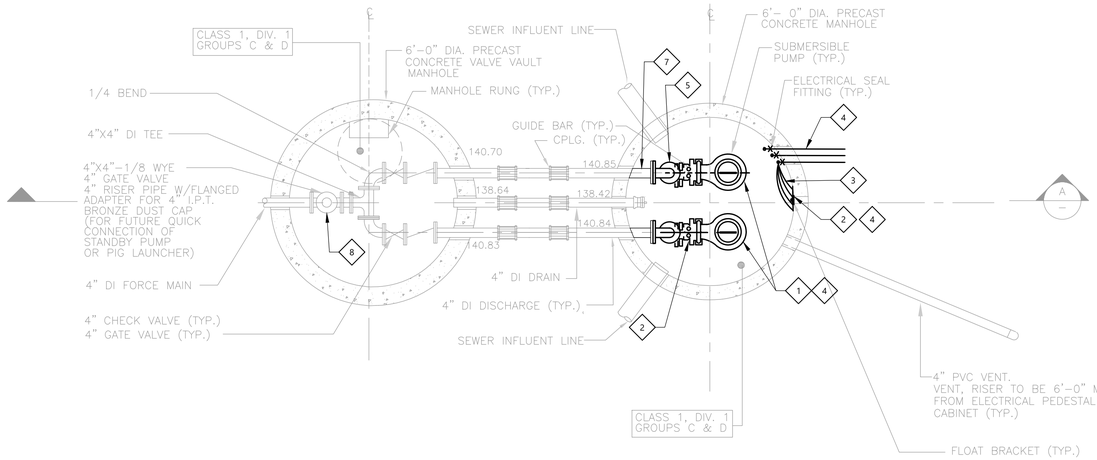
DRAWING NO:
MD-101

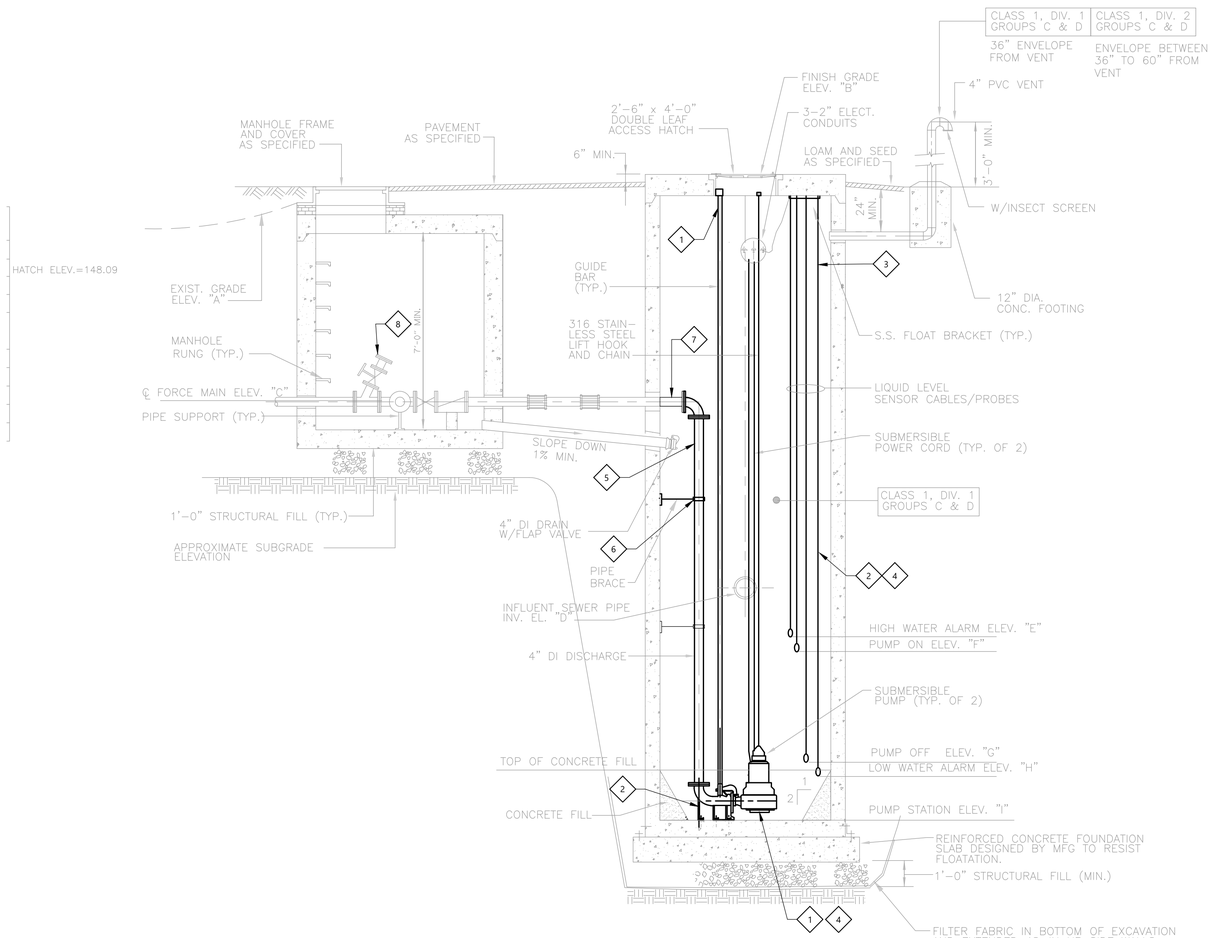
\\woodardcurran.net\shared\Projects\023533400 Tewksbury MA Devonshire Pump Station Upgrades\wip\Drawings\Mechanical\023533400-MD-101.dwg, Jan 22, 2025 - 2:09pm JFORTIN

22x34

Station Pump Schedule		
Equipment Summary	No. of Pumps	2
	Equipment Tags	P-001, P-002
Performance	Condition	Duty Point
	Flow (gpm)	120
	Total Dynamic Head (ft)	37
	Static Head (ft)	22
	Max. Speed (rpm)	1750
Electrical Requirements	Max. HP	5
	Voltage	230
	Hz	60
	Phase	3
	Electrical Hazard Classification	Class I Div I
	VFD	Yes - In accordance with Sections 26 29 23 AND 43 25 10.
	Min. Cable Length* (ft)	50
Equipment Reference	Pump Type	Submersible
	Pump Installation	Wet Pit Base w/ Guide Rails
	Impeller Material	Cast Iron or White Iron
	Impeller Type	Chopper/Grinder
	Min. Solids Diameter (in)	3
	Min. Inlet Diameter (in)	3
	Discharge Diameter (in)	4
	Specification Reference	43 25 10

PUMP STATION ELEVATION SCHEDULE		
DESCRIPTION	**ELEVATION**	**DIAMETER**
HATCH	148.09	
FINISHED GRADE (B)	147.20	
FORCE MAIN CENTERLINE	140.61	4-INCH
INFLUENT SEWER DIAMETER	137.33	12-INCH
INFLUENT SEWER DIAMETER	137.37	8-INCH
HIGH WATER ALARM	136.79	
PUMP ON (F)	136.29	
PUMP OFF (G)	134.29	
LOW WATER ALARM (H)	133.79	
PUMP STATION BASE (I)	133.01	


CLASS 1, DIV. 1 GROUPS C & D
6'-0" DIA. PRECAST CONCRETE VALVE VAULT MANHOLE
MANHOLE RUNG (TYP.)
SEWER INFLUENT LINE
6'- 0" DIA. PRECAST CONCRETE MANHOLE
SUBMERSIBLE PUMP (TYP.)
ELECTRICAL SEAL FITTING (TYP.)
1/4 BEND
4"X4" DI TEE
4"X4"-1/8 WYE
4" GATE VALVE
4" RISER PIPE W/FLANGED ADAPTER FOR 4" I.P.T. BRONZE DUST CAP (FOR FUTURE QUICK CONNECTION OF STANDBY PUMP OR PIG LAUNCHER)
4" DI FORCE MAIN
4" CHECK VALVE (TYP.)
4" GATE VALVE (TYP.)
GUIDE BAR (TYP.)
CPLG. (TYP.)
140.70
140.85
138.64
138.42
140.84
140.83
4" DI DRAIN
4" DI DISCHARGE (TYP.)
SEWER INFLUENT LINE
CLASS 1, DIV. 1 GROUPS C & D
4" PVC VENT. VENT, RISER TO BE 6'-0" MIN. FROM ELECTRICAL PEDESTAL CABINET (TYP.)
FLOAT BRACKET (TYP.)


CLASS 1, DIV. 1 GROUPS C & D
CLASS 1, DIV. 2 GROUPS C & D
36" ENVELOPE FROM VENT
ENVELOPE BETWEEN 36" TO 60" FROM VENT
FINISH GRADE ELEV. "B"
4" PVC VENT
MANHOLE FRAME AND COVER AS SPECIFIED
PAVEMENT AS SPECIFIED
2'-6" x 4'-0" DOUBLE LEAF ACCESS HATCH
3-2" ELECT. CONDUITS
6" MIN.
LOAM AND SEED AS SPECIFIED
5'-0" MIN.
24" MIN.
W/INSECT SCREEN
HATCH ELEV.=148.09
EXIST. GRADE ELEV. "A"
GUIDE BAR (TYP.)
12" DIA. CONC. FOOTING
S.S. FLOAT BRACKET (TYP.)
MANHOLE RUNG (TYP.)
7'-0" MIN.
316 STAIN-LESS STEEL LIFT HOOK AND CHAIN
LIQUID LEVEL SENSOR CABLES/PROBES
℄ FORCE MAIN ELEV. "C"
PIPE SUPPORT (TYP.)
SUBMERSIBLE POWER CORD (TYP. OF 2)
SLOPE DOWN 1% MIN.
CLASS 1, DIV. 1 GROUPS C & D
1'-0" STRUCTURAL FILL (TYP.)
4" DI DRAIN W/FLAP VALVE
APPROXIMATE SUBGRADE ELEVATION
PIPE BRACE
INFLUENT SEWER PIPE INV. EL. "D"
HIGH WATER ALARM ELEV. "E"
PUMP ON ELEV. "F"
4" DI DISCHARGE
SUBMERSIBLE PUMP (TYP. OF 2)
TOP OF CONCRETE FILL
PUMP OFF ELEV. "G"
LOW WATER ALARM ELEV. "H"
CONCRETE FILL
PUMP STATION ELEV. "I"
REINFORCED CONCRETE FOUNDATION SLAB DESIGNED BY MFG TO RESIST FLOATATION.
1'-0" STRUCTURAL FILL (MIN.)
FILTER FABRIC IN BOTTOM OF EXCAVATION AND EXTENDED 48-IN UP SIDE WALLS

4' 3' 2' 1' 0 3' 6'

BAR SCALE
3/8" = 1'-0"
CHECK GRAPHIC SCALE BEFORE USING

SHEET GENERAL NOTES

1. EXISTING CONDITIONS SHOWN HEREIN, INCLUDING THE ELEVATIONS IN THE PUMP STATION ELEVATION SCHEDULE, ARE BASED ON FIELD RECORD DRAWINGS FROM "SEWERAGE WORKS IMPROVEMENTS PHASE 9 CONTRACT NO. 31" DATED JANUARY 2007.
2. ALL ITEMS SHOWN WITH LIGHT DESIGNATION INDICATES EXISTING EQUIPMENT. ALL ITEMS SHOWN WITH BOLD DESIGNATION INDICATES DEMOLISHED, PROPOSED, OR RELOCATED EQUIPMENT, UNLESS SPECIFICALLY INDICATED OTHERWISE.
3. EQUIPMENT SHOWN ON THIS SHEET FOR DIAGRAMMATICAL PURPOSES ONLY. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS WITH ENGINEER & OWNER IN THE FIELD PRIOR TO PERFORMING WORK.
4. EQUIPMENT DIMENSIONS AND LOCATIONS SHALL BE FIELD VERIFIED.
5. COORDINATE ALL WORK ON THIS SHEET WITH OTHER DISCIPLINES.
6. ALL NEW HARDWARE SHALL BE 316 SS.
7. ALL NEW PIPING AND FITTINGS SHALL BE PAINTED IN ACCORDANCE WITH SECTION 09 90 00.
8. ANY DAMAGED CONCRETE SHALL BE REPAIRED PRIOR TO INSTALLATION OF NEW EQUIPMENT IN ACCORDANCE WITH SECTION 03 01 05.
9. FLOAT ELEVATIONS SHOWN IN THE PUMP STATION ELEVATION SCHEDULE ON THIS PAGE SHALL BE VERIFIED AND ELEVATIONS PROVIDED TO ENGINEER PRIOR TO DEMOLITION. PROPOSED FLOATS SHALL BE INSTALLED AT THE ELEVATIONS MEASURED BY THE CONTRACTOR.

SHEET KEYNOTES

1. PROVIDE PUMPS IN ACCORDANCE WITH STATION PUMP SCHEDULE ON THIS SHEET AND SECTION 43 25 10.
2. PROVIDE PUMP MOUNTING EQUIPMENT, GUIDE RAILS, LIQUID LEVEL FLOATS, FLOAT MOUNTING BRACKET, PUMP CONTROL PANEL, AND ASSOCIATED APPURTANCES IN ACCORDANCE WITH SECTION 43 25 10.
3. EXCESS WIRE SHALL BE MOUNTED AND COILED IN THE WET WELL SUCH THAT IT DOES NOT INTERFERE WITH FLOATS OR PUMP REMOVAL. EXCESS WIRING SHALL NOT EXCEED 10 FT.
4. COORDINATE WITH ELECTRICAL DRAWING TO PROVIDE ELECTRICAL INSTALLATION FOR PROPOSED EQUIPMENT.
5. PROVIDE DUCTILE IRON PIPE (DI/1) TO CONNECT NEW PUMP TO THE EXISTING PIPE STUB (TYP.).
6. PROVIDE PIPE BRACE FOR THE PROPOSED DUCTILE IRON PIPE. PIPES SHALL BE SUPPORTED AT A MAXIMUM EVERY 3 VERTICAL FEET (TYP).
7. SURFACE PREP AND PAINT THE DUCTILE IRON PIPE STUB TO THE FIRST FLANGE IN ACCORDANCE WITH SECTION 09 90 00 (TYP.)
8. PROVIDE TEMPORARY SEWAGE BYPASSING IN ACCORDANCE WITH SECTION 01 57 31.

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

PE SEAL:

COMMONWEALTH OF MASSACHUSETTS
JASON D. JANCAITIS
CIVIL
No. 46814
REGISTERED PROFESSIONAL ENGINEER

Jason D. Jancaitis

Digitally signed by Jason D. Jancaitis
DN: C=US, E=jjancaitis@woodardcurran.com, O=Woodard & Curran, Inc.", CN=Jason D. Jancaitis
Reason: I agree to the terms defined by the placement of my signature on this document.
Contact Info: jjancaitis@woodardcurran.com
Date: 2025.03.22 17:00:08-05'00'

ISSUED FOR BID - NOT FOR CONSTRUCTION

CLIENT INFO:

TOWN OF TEWKSBURY, MASSACHUSETTS

DEVONSHIRE ROAD PUMP STATION IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0235334.00
DATE:	JANAURY 2025
SCALE:	AS NOTED
DESIGNED BY:	JF
DRAWN BY:	CB
CHECKED BY:	MC
FILENAME:	023533400-M-101.dwg

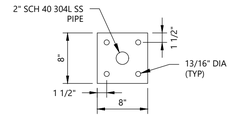
DRAWING TITLE:

MECHANICAL
PUMP STATION PLAN AND SECTION

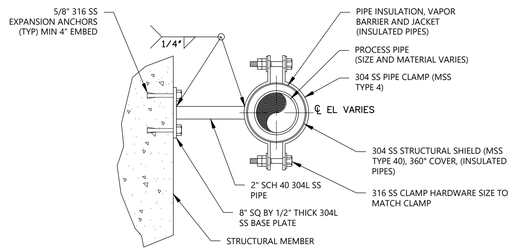
DRAWING NO:

M-101

\\woodardcuran.net\shared\Projects\0235334.00 Tewksbury MA Devonshire Pump Station Upgrades\wip\Drawings\Mechanical\023533400-M-101.dwg, Jan 22, 2025 - 2:09pm JFORTIN



BASE PLATE


5/8" 316 SS EXPANSION ANCHORS (TYP) MIN 4" EMBED
1/4"
PIPE INSULATION, VAPOR BARRIER AND JACKET (INSULATED PIPES)
PROCESS PIPE (SIZE AND MATERIAL VARIES)
304 SS PIPE CLAMP (MSS TYPE 4)
℄ EL VARIES
304 SS STRUCTURAL SHIELD (MSS TYPE 40), 360° COVER, (INSULATED PIPES)
316 SS CLAMP HARDWARE SIZE TO MATCH CLAMP
2" SCH 40 304L SS PIPE
8" SQ BY 1/2" THICK 304L SS BASE PLATE
STRUCTURAL MEMBER

NOTES:

1. FIELD VERIFY INSTALLATION LOCATION WITH ENGINEER.
2. PROVIDE PROTECTION SHIELDS WITH 360° COVERAGE FOR INSULATED PIPES

1 PIPE BRACE DETAIL

NOT TO SCALE

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

PE SEAL:

COMMONWEALTH OF MASSACHUSETTS
JASON D. JANCAITIS
CIVIL
No. 46814
REGISTERED PROFESSIONAL ENGINEER

Jason D. Jancaitis

Digitally signed by Jason D. Jancaitis
DN: C=US, E=jancaitis@woodardcurran.com, O=Woodard & Curran, Inc., CN=Jason D. Jancaitis
Reason: I agree to the terms defined by the placement of my signature on this document.
Contact Info: jancaitis@woodardcurran.com
Date: 2025.01.22 17:00:10-05'00'

ISSUED FOR BID - NOT FOR CONSTRUCTION

CLIENT INFO:

TOWN OF TEWKSBURY, MASSACHUSETTS

DEVONSHIRE ROAD PUMP STATION IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0235334.00
DATE:	JANUARY 2025
SCALE:	N/A
DESIGNED BY:	JF
DRAWN BY:	CB
CHECKED BY:	MC
FILENAME:	023533400-M-901.dwg

DRAWING TITLE:

MECHANICAL DETAIL 1

DRAWING NO:

M-901

\\woodardcurran.net\shared\Projects\0235334.00 Tewksbury MA Devonshire Pump Station Upgrades\wip\Drawings\Mechanical\023533400-M-901.dwg, Jan 22, 2025 - 2:10pm JFORTIN

22x34

GENERAL

- LP-01 — HOME RUN. ARROWS INDICATE NUMBER OF CIRCUITS, CROSS LINES INDICATE NUMBER OF WIRES, OTHER THAN TWO (2) PLUS BOND, WIRE SIZE NOT SHOWN INDICATES #12AWG MIN. (INDICATES CIRCUIT NUMBER; PANEL DESIGNATION)
- WIRING IN RACEWAY
- WIRING IN RACEWAY CONCEALED UNDERGROUND OR UNDERSLAB, MINIMUM 3/4"C
- 3/C #nn W/GND; EquipNo-P — CONDUIT AND CABLE ID TAG
- CONDUIT TURNING UP
- CONDUIT TURNING DOWN
- CONDUIT STUB
- EY CONDUIT SEAL
- FLEXIBLE NON-METALLIC CONDUIT
- PANELBOARD
- CP — CONTROL PANEL
- ATC — AUTOMATIC TEMPERATURE CONTROL PANEL
- ISBP — INTRINSIC SAFETY BARRIER PANEL
- POWER COMPANY METER
- HS; H/O/A — LOCAL SELECTOR SWITCH H/O/A - HAND/OFF/AUTO H/O/R - HAND/OFF/REMOTE L/O/R - LOCAL/OFF/REMOTE
- PUSHBUTTON STATION, WITH "EM" EMERGENCY
- J — JUNCTION BOX
- MD — MOTORIZED DAMPER
- T — THERMOSTAT
- R — RELAY
- B T — DOOR BELL/BUZZER AND TRANSFORMER -MTD CL UP 7'-0" AFF
- EQUIP#; Description — EQUIPMENT TAG
- 1 — KEYED NOTE TAG
- 1 — REVISION TRIANGLE
- BRACKET
- A; X-XXX — SECTION LETTER; SHEET # — SECTION CALL OUT
- (TYP.); 1; X-0X — DETAIL CALL OUT

LIGHTING

- 2x4 LIGHT FIXTURE
- Ab — ASSOCIATED CONTROL DEVICE; FIXTURE TYPE (SEE LIGHT FIXTURE SCHEDULE)
- 1x4 LIGHT FIXTURE
- 2x2 LIGHT FIXTURE
- FIXTURE WITH INTEGRAL EMERGENCY BATTERY PACK
- FIXTURE WIRED TO UNSWITCHED EMERGENCY CIRCUIT
- DOWN LIGHT
- WALL MOUNTED FIXTURES
- AA — POLE MOUNTED SITE LIGHTING FIXTURE; FIXTURE TYPE (SEE LIGHT FIXTURE SCHEDULE)
- FLOOD LIGHT
- EXIT SIGN, CEILING MOUNTED. ARROW INDICATES EGRESS DIRECTION. SHADING INDICATES SIGN FACE. NUMERAL INDICATES BATTERY UNIT CONNECTED
- EXIT SIGN, WALL MOUNTED 7'-6" AFF OR 0'-6" ABOVE DOOR. SHADING INDICATES SIGN FACE. NUMERAL INDICATES BATTERY UNIT CONNECTED TO
- BATT — DUAL HEAD EMERGENCY LIGHT BATTERY PACK WITH NUMBER OF HEADS AS INDICATED - WALL MOUNTED MTD 7'-6" AFF. NUMERAL INDICATES BATTERY ID NUMBER
- TANDEM EMERGENCY LIGHT BATTERY PACK & EXIT SIGN - WALL MOUNTED MTD 7'-6" AFF OR 0,-6" ABOVE DOOR. NUMERAL INDICATES BATTERY ID NUMBER
- REMOTE EMERGENCY LIGHTING HEAD - WALL MOUNTED MTD 7'-6" AFF. NUMERAL INDICATES BATTERY UNIT CONNECTED TO
- S — SINGLE POLE TOGGLE SWITCH - MTD CL UP 4'-0" AFF
- S_2 — DOUBLE POLE TOGGLE SWITCH - MTD CL UP 4'-0" AFF
- S_3 — 3-WAY TOGGLE SWITCH - MTD CL UP 4'-0" AFF
- S_4 — 4-WAY TOGGLE SWITCH - MTD CL UP 4'-0" AFF
- S_M — WALL MOUNTED OCCUPANCY SENSOR - MTD CL UP 4'-0" AFF
- S_P — TOGGLE SWITCH WITH PILOT LIGHT - MTD CL UP 4'-0" AFF
- S_D — DIMMER SWITCH - MTD CL UP 4'-0" AFF
- S_{LV} — LOW VOLTAGE SWITCH - MTD CL UP 4'-0" AFF
- a — OCCUPANCY SENSOR; a. INDICATES CONTROLLED FIXTURE
- PC — PHOTOCELL
- LC — LIGHTING CONTACTOR
- MS — MOTION SENSOR

COMMUNICATIONS

- TEL — TELEPHONE BACKBOARD
- WX — PROVISIONS FOR TELEPHONE OUTLET. TWO-GANG WALL BOX WITH ONE 1"C STUB TO ABOVE ACCESSIBLE CEILING - MTD CL UP SAME AS ASSOCIATED RECEPTACLE; W-INDICATES WALL MOUNTED AT 60" AFF; P-INDICATES PAYPHONE MOUNTED AT 4'-0" AFF; X-INDCATES NUMBER OF JACKS, SINGLE BOX
- PROVISIONS FOR DATA OUTLET. TWO-GANG WALL BOX WITH ONE 1"C STUB TO ABOVE ACCESSIBLE CEILING - MTD CL UP SAME AS ASSOCIATED RECEPTACLE. SUBSCRIPTS AS NOTED ABOVE
- 2D2T — PROVISIONS FOR TELEPHONE & DATA OUTLET. TWO-GANG WALL BOX WITH ONE 1"C STUB TO ABOVE ACCESSIBLE CEILING - MTD CL UP SAME AS ASSOCIATED RECEPTACLE. SUBSCRIPTS AS NOTED ABOVE
- PROVISIONS FOR SCADA SYSTEM OUTLET. TWO-GANG WALL BOX WITH ONE 1"C STUB TO ABOVE ACCESSIBLE CEILING - MTD CL UP SAME AS ASSOCIATED RECEPTACLE
- CEILING MOUNTED TELEPHONE SYSTEM OUTLET
- CEILING MOUNTED DATA SYSTEM OUTLET
- CEILING MOUNTED TELEPHONE & DATA OUTLET
- FLUSH FLOOR MOUNTED TELEPHONE SYSTEM OUTLET
- FLUSH FLOOR MOUNTED DATA SYSTEM OUTLET
- FLUSH FLOOR MOUNTED TELEPHONE & DATA OUTLET
- TV — TELEVISION COAXIAL OUTLET, MOUNTED UP SAME AS ASSOCIATED RECEPTACLE

SECURITY

- SEC — SECURITY PANEL
- DS — DOOR INTRUSION SWITCH
- DE — ELECTRIC DOOR STRIKE
- CR — CARD READER
- KP — KEY PAD
- MOTION DETECTOR
- CAM — SECURITY CAMERA PTZ = PAN/TILT/ZOOM

INTERCOM & PAGING SYSTEM

- S — CEILING MOUNTED SPEAKER
- PA — PAGING SYSTEM CONTROL PANEL
- HS — PAGING SYSTEM HANDSET

ONE-LINE DIAGRAM SYMBOLS

- 52 GCB1; CB 800A E.O.; 52 — HV VOLTAGE DRAWOUT TYPE POWER CIRCUIT BREAKER ELECTRICALLY OPERATED (E.O.)
- MV VOLTAGE DRAWOUT TYPE POWER CIRCUIT BREAKER WITH MANUAL CONTROL SWITCH
- AT / AF; EO — LOW VOLTAGE CIRCUIT BREAKER; AF - AMP FRAME; AT - AMP TRIP; EO - ELECTRICALLY OPERATED
- ST — ST - SHUNT TRIP; GF - GROUND FAULT; EO - ELECTRICALLY OPERATED
- DISCONNECT, ISOLATION OR SAFETY SWITCH
- FUSED DISCONNECT SWITCH
- 1 — MAGNETIC MOTOR STARTER, NUMERAL INDICATES NEMA SIZE; FVNR UNLESS OTHERWISE NOTED; FVR - FULL VOLTAGE REVERSING; RVAT - REDUCING VOLTAGE AUTO TRANSFORMER; 2S - TWO SPEED; YD - WYE DELTA REDUCED VOLTAGE STARTER
- CAPACITOR
- VFD; 11 — VFD - VARIABLE FREQUENCY DRIVE; SS - SOLID STATE STARTER; DC - DC VARIABLE DRIVE; NUMBER INDICATES AMP RATING
- OA — POWER TRANSFORMER; OA - LIQUID TYPE SELF COOLED; AA - DRY TYPE SELF COOLED; FA - FAN COOLED; CONNECTION
- 2; 480/120 — POTENTIAL TRANSFORMER; RATIO; NUMBER REQUIRED
- 2; 600/5 — CURRENT TRANSFORMER; RATIO; PHASE
- S — MOTOR, NUMERAL INDICATES HORSEPOWER
- X — GENERAL LOAD, NUMERAL INDICATES LOAD IN KVA
- GENERATOR
- N E L; ATS — ATS - AUTOMATIC TRANSFER SWITCH; MTS - MANUAL TRANSFER SWITCH
- A — METER; A - AMMETER; V - VOLTMETER; W - WATTMETER; KWH - KILOWATT HOUR; KVAR - KILOVAR METER; VAR - VAR METER; HZ - FREQUENCY METER; PF - POWER FACTOR METER
- 3 — LINE OR LOAD REACTOR; NUMERAL INDICATES % IMPEDANCE
- DPM — DIGITAL POWER MONITOR
- AS — METER TRANSFER SWITCH; AS - AMMETER SWITCH; VS - VOLTMETER SWITCH
- SPD — SPD - SURGE PROTECTION DEVICE; ENDN - ETHERNET TO DEVICENET LINKING DEVICE; DPS - DEVICENET POWER SUPPLY
- MEDIUM VOLTAGE CABLE TERMINATION
- DRAWOUT DEVICE
- LA — LIGHTNING ARRESTER
- K — KEY INTERLOCK

CONTROL DIAGRAM SYMBOLS

NOTE: ALL CONTROL SYMBOLS ARE DRAWN ASSUMING DE-ENERGIZED CIRCUITS, EMPTY TANKS, UNPRESSURIZED LINES, ETC.

OPEN ON INCREASE	CLOSE ON INCREASE	
		PRESSURE SWITCH
		LEVEL SWITCH
		FLOW SWITCH
		TEMPERATURE SWITCH
NORMALLY CLOSED	**NORMALLY OPEN**	
		PUSH BUTTON
		INSTANTANEOUS CONTACT
		TIMED CLOSE CONTACT
		TIMED OPEN CONTACT
		LIMIT SWITCH

- H O A; XOO; OOX — SELECTOR SWITCH: QUANTITY OF ARROWS INDICATES NUMBER OF POSITIONS. XOO INDICATES UPPER CONTACT CLOSED IN LEFT POSITION AND OPEN IN CENTER AND RIGHT POSITIONS
- INTERNAL WIRING
- FIELD WIRING
- RELAY COIL

ABBREVIATIONS

A,AMP	AMPERES
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERE INTERRUPT CAPACITY
AWG	AMERICAN WIRE GAUGE
BFG	BELOW FINISHED GRADE
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CL	CENTER LINE
CKT	CIRCUIT
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
E.C.	ELECTRICAL CONTRACTOR
EMT	ELECTRIC METALLIC TUBING
FAA	FIRE ALARM ANNUNCIATOR
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FWE	FURNISHED WITH EQUIPMENT
G.C.	GENERAL CONTRACTOR
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
G,GND	GROUND
HP	HORSEPOWER
HZ	FREQUENCY IN CYCLES/SECOND
IG	ISOLATED GROUND
IMT	INTERMEDIATE METALLIC CONDUIT
I/S	INTRINSICALLY SAFE
JBOX	JUNCTION BOX
K	KILO
KCMIL	1000 CIRCULAR MILS
KVA	KILOVOLT AMPERE
KVAR	KILOVOLT AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT HOUR
MCC	MOTOR CONTROL CENTER
MCB	MAIN CIRCUIT BREAKER
MFG	MANUFACTURER
MH	MANHOLE
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTR	MOTOR
MV	MEDIUM VOLTAGE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEUT	NEUTRAL
NO	NORMALLY OPEN
OL	OVERLOAD ELEMENT
PF	POWER FACTOR
PH	PHASE
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
RGS	RIGID STEEL CONDUIT
RTD	RESISTANCE TEMPERATURE DETECTOR
SEC	SECONDARY
SS	STAINLESS STEEL
SV	SOLENOID VALVE
TEMP	TEMPERATURE
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UE	UNDERGROUND ELECTRIC
UG	UNDERGROUND
UPS	UNINTERRUPTED POWER SUPPLY
V	VOLTS
VA	VOLT-AMPERES
VAR	VOLT-AMPERE REACTIVE
W	WATT
WM	WATT METER
WP	WEATHER PROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF

POWER

- NON-FUSED SAFETY SWITCH
- F — FUSED SAFETY SWITCH
- NON-FUSED DISCONNECT/MAGNETIC MOTOR STARTER
- M — MANUAL MOTOR SWITCH (MOTOR RATED SWITCH), TOGGLE OPERATED, SINGLE PHASE. 1 OR 2 POLE AS REQUIRED\
- CB; 100A — ENCLOSED CIRCUIT BREAKER W/AMPERE RATING
- S — ELECTRIC MOTOR, NUMBER INDICATES HORSEPOWER RATING, "F" INDICATES FRACTIONAL LESS THAN 1/20HP OR 100W
- T — TRANSFORMER
- POWER POLE
- DUPLEX RECEPTACLE, NEMA 5-20R - MTD CL UP 24" OR AS NOTED."WP" WEATHER PROOF, "G" PROTECTED BY GFCI RECEPTACLE OR BREAKER UPSTREAM, "H" MOUNTED 0'-6" BELOW CEILING, "TV" MOUNT 7'-6" UP
- DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R - MTD CL UP 24" OR AS NOTED
- SINGLE RECEPTACLE, NEMA 5-20R - MTD CL UP 24" OR AS NOTED
- GFCI DUPLEX RECEPTACLE, NEMA 5-20R - MOUNTED CL UP 48" OR 6" ABOVE COUNTER
- DOUBLE DUPLEX GFCI RECEPTACLE, NEMA 5-20R - MOUNTED CL UP 48" OR 6" ABOVE COUNTER
- FLUSH FLOOR OUTLET, DUPLEX RECEPTACLE, NEMA 5-20R
- MULTI SERVICE FLUSH FLOOR BOX WITH DUPLEX RECEPTACLE AND PROVISIONS FOR DATA
- POWER RECEPTACLE, NEMA CONFIGURATION AS NOTED OR AS REQUIRED FOR EQUIPMENT SERVED
- FLUSH CEILING MTD DEVICE BOXES, ONE W/ DUPLEX RCPT FOR PROJECTOR POWER AND ONE FOR DATA TO SERVE OH PROJECTOR. RUN ONE 1 1/2"C TO JBOX LOCATED AT FRONT OF ROOM FOR PROJECTOR CABLE PATHWAY. VERIFY FINAL LOCATION W/ OWNER PRIOR TO ROUGH IN.
- MULITI-OUTLET POWER STRIP, MOUNT 0'-6" ABOVE COUNTERTOP, RECEPTACLE SPACING AS NOTED.

FIRE ALARM DIAGRAM SYMBOLS

- FACP — FIRE ALARM CONTROL PANEL
- FAA — FIRE ALARM ANNUNCIATOR
- FCPS — FIELD CHARGER POWER SUPPLY
- M — FIRE ALARM MASTER BOX
- K — KNOX BOX
- F — FIRE ALARM MANUAL PULL STATION - WALL MTD CL UP 4'-0"
- H L — FIRE ALARM AUDIBLE/VISIBLE NOTIFICATION APPLIANCE CANDELA (CD) POWER PER NFPA 72 OR AS NOTED - WALL MTD BOTTOM UP 80" AFF. "H" HORN, "V" VOICE
- L — FIRE ALARM VISUAL NOTIFICATION APPLIANCE CANDELA (CD) POWER PER NFPA 72 OR AS NOTED - WALL MTD BOTTOM UP 80" AFF
- CEILING MOUNTED SMOKE DETECTOR
- CEILING MOUNTED HEAT DETECTOR
- DUCT SMOKE DETECTOR S=SUPPLY, R=RETURN
- FS — SPRINKLER SYSTEM FLOW SWITCH
- TS — SPRINKLER SYSTEM TAMPER SWITCH
- PS — SPRINKLER SYSTEM PRESSURE SWITCH
- DH — FIRE ALARM SYSTEM MAGNETIC DOOR HOLDER
- Z — MONITOR MODULE
- C — CONTROL MODULE
- R — RELAY MODULE

INSTRUMENTATION

- XX; XXX — FIELD MOUNTED INSTRUMENT; INSTRUMENT IDENTIFICATION TYPE; INSTRUMENT LOOP NO.
- XX; XXX — VENDOR SUPPLIED INSTRUMENT

INSTRUMENT IDENTIFIER:

AE	ANALYSIS ELEMENT
AIT	ANALYSIS INDICATING TRANSMITTER
AT	ANALYSIS TRANSMITTER
DPS	DIFFERENTIAL PRESSURE SWITCH
FCV	FLOW CONTROL VALVE
FE	FLOW ELEMENT
FIT	FLOW INDICATING TRANSMITTER
FT	FLOW TRANSMITTER
FS	FLOW SWITCH
LE	LEVEL ELEMENT
LIT	LEVEL INDICATING TRANSMITTER
LT	LEVEL TRANSMITTER
LS	LEVEL SWITCH
LSH	LEVEL SWITCH HIGH
LSL	LEVEL SWITCH LOW
MOV	MOTOR OPERATED VALVE
PE	PRESSURE ELEMENT
PIT	PRESSURE INDICATING TRANSMITTER
PT	PRESSURE TRANSMITTER
PS	PRESSURE SWITCH
SV	SOLENOID VALVE
TE	TEMPERATURE ELEMENT
TIT	TEMPERATURE INDICATING TRANSMITTER
TT	TEMPERATURE TRANSMITTER
ZS	PROXIMITY SWITCH

MISCELLANEOUS TERMINALS

- ARROW, SMALL
- ARROW, LARGE
- ARROW, TRIANGULAR
- CONTINUE, SMALL
- CONTINUE, LARGE
- DOT, SMALL
- DOT, MEDIUM
- DOT, LARGE
- POLARITY SQUARE
- SCREW TERMINAL
- TERMINAL POINT, SMALL
- TERMINAL POINT, LARGE
- TERMINAL POINT, SQUARE
- SHIELD
- SHIELD W/TERMINAL POINT

GROUNDING

- BARE COPPER GROUND CABLE. (SIZE 4/0 UNLESS OTHERWISE NOTED)
- 3/4"Ø X 10'-0" LONG GROUND ROD. (10'-0" MINIMUM LENGTH)
- EQUIPMENT BOLTED CONNECTION OR APPROVED EQUAL.
- CADWELD EXOTHERMIC CONNECTION
- GROUND

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

PE SEAL:

COMMONWEALTH OF MASSACHUSETTS — ANDREW FITZPATRICK — ELECTRICAL — No. 50761 — REGISTERED PROFESSIONAL ENGINEER

Digitally signed by Andrew J. Fitzpatrick
DN: CN=US, E=afitzpatrick@woodardcurran.com, O=Woodard & Curran, OU=Technical Delivery Group, CN=Andrew J. Fitzpatrick
Reason: I agree to the terms defined by the placement of my signature on this document.
Contact Info: 800.426.4262
Date: 2025.02.22 15:18:47-05'00'

ISSUED FOR BID - NOT FOR CONSTRUCTION

CLIENT INFO:

TOWN OF TEWKSBURY, MASSACHUSETTS

DEVONSHIRE ROAD PUMP STATION IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0235334.00
DATE:	JANUARY 2025
SCALE:	NO SCALE
DESIGNED BY:	DJB
DRAWN BY:	DJB
CHECKED BY:	AJF
FILENAME:	E-001.dwg

DRAWING TITLE:

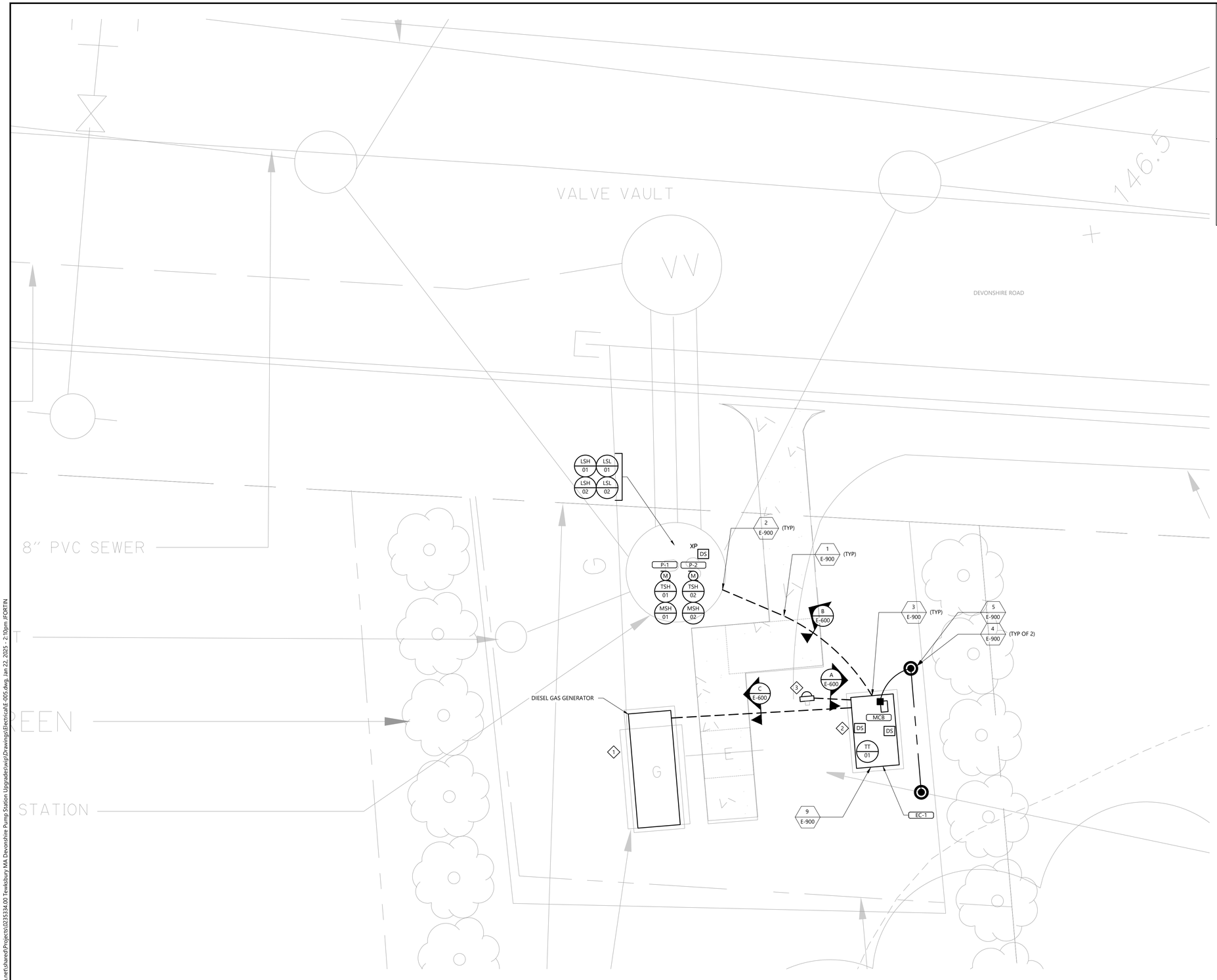
ELECTRICAL LEGEND

DRAWING NO:

E-001

\\woodardcurran.net\shared\Projects\0235334.00 Tewksbury MA Devonshire Pump Station Upgrades\wip\Drawings\Electrical\E-001.dwg, Jan 22, 2025 - 2:10pm JFORTIN

22x34



SHEET GENERAL NOTES

1. ALL ITEMS SHOWN WITH LIGHT DESIGNATION INDICATES EXISTING EQUIPMENT. ALL ITEMS SHOWN WITH BOLD DESIGNATION INDICATES DEMOLISHED OR RELOCATED EQUIPMENT, UNLESS SPECIFICALLY INDICATED OTHERWISE.
2. EQUIPMENT SHOWN ON THIS SHEET FOR DIAGRAMMATICAL PURPOSES ONLY. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS WITH ENGINEER & OWNER IN THE FIELD PRIOR TO PERFORMING WORK.
3. EQUIPMENT DIMENSIONS, BUILDING DIMENSIONS AND DIMENSIONS SHALL BE FIELD VERIFIED.
4. ALL PENETRATIONS SHALL BE APPROPRIATELY SEALED.
5. FOR ADDITIONAL CONDUIT WIRING INFORMATION SEE ONE-LINE DIAGRAM AND DUCTBANK SCHEDULES.
6. COORDINATE ALL WORK SHOWN THIS SHEET WITH OTHER DISCIPLINES.
7. INSTALLATION SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST VERSION OF THE MASSACHUSETTS ELECTRIC CODE (MEC), & LOCAL AMENDMENTS.

SHEET KEYNOTES

XX

1. PROVIDE CONCRETE HOUSEKEEPING PAD IN PLACE OF EXISTING GENERATOR PAD FOR NEW GENERATOR AND SUBBASE FUEL TANK. SEE EQUIPMENT PAD DETAILS ON C-901 FOR ADDITIONAL PAD REQUIREMENTS.
2. PROVIDE CONCRETE HOUSEKEEPING PAD FOR NEW ELECTRICAL EQUIPMENT ENCLOSURE. SEE EQUIPMENT PAD DETAILS ON C-901 FOR ADDITIONAL PAD REQUIREMENTS.
3. PROVIDE 4" X 4" WEATHERPROOF POST TO RE-SUPPORT EXISTING UTILITY METER. RE-CONNECT EXISTING UTILITY FEEDER CONDUIT AND CONDUCTORS TO REMOUNTED UTILITY METER.

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

PE SEAL:

COMMONWEALTH OF MASSACHUSETTS
ANDREW FITZPATRICK
ELECTRICAL
No. 50761
REGISTERED PROFESSIONAL ENGINEER

Digitally signed by Andrew J. Fitzpatrick
DN: cn=Andrew J. Fitzpatrick, e=AFitzpatrick@woodardcurran.com, o=Woodard & Curran, ou=Technical Delivery Group, c=US
Location: Bangor, ME
Reason: I am the author of the terms defined by the placement of my signature on this document.
Contact info: 800.426.4262
Date: 2025.01.22 15:19:33-05'00'

ISSUED FOR BID - NOT FOR CONSTRUCTION

CLIENT INFO:

TOWN OF TEWKSBURY, MASSACHUSETTS

DEVONSHIRE ROAD PUMP STATION IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0235334.00
DATE:	JANUARY 2025
SCALE:	AS NOTED
DESIGNED BY:	DJB
DRAWN BY:	DJB
CHECKED BY:	AJF
FILENAME:	E-005.dwg

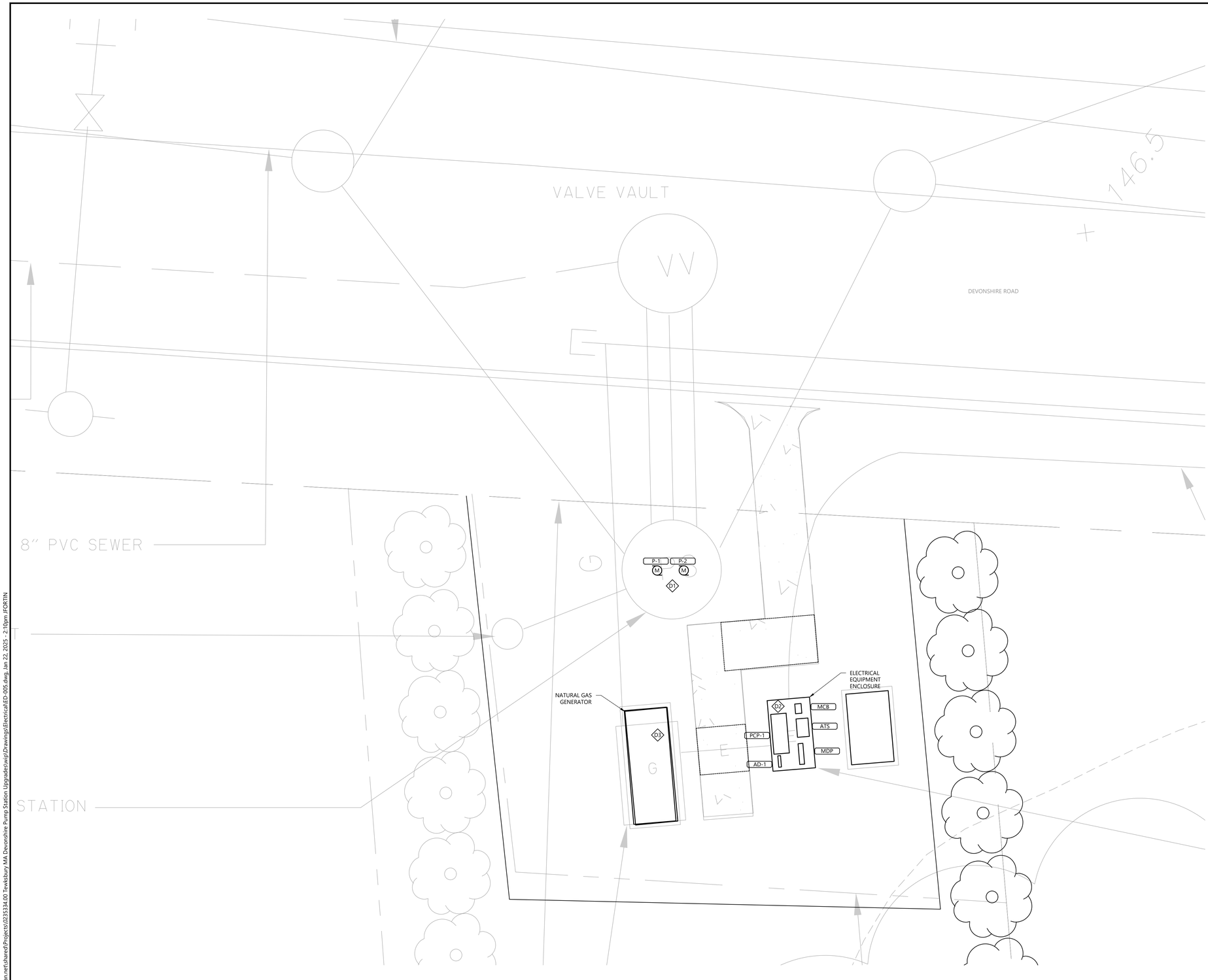
DRAWING TITLE:

ELECTRICAL SITE PLAN

DRAWING NO:

E-005

\\woodardcurran.net\share\Projects\0235334.00 Tewksbury MA Devonshire Pump Station Upgrades\wip\Drawings\Electrical\E-005.dwg, Jan 22, 2025 - 2:10pm JFORTIN



SHEET GENERAL NOTES

1. ALL ITEMS SHOWN WITH LIGHT DESIGNATION INDICATES EXISTING EQUIPMENT. ALL ITEMS SHOWN WITH BOLD DESIGNATION INDICATES DEMOLISHED OR RELOCATED EQUIPMENT, UNLESS SPECIFICALLY INDICATED OTHERWISE.
2. EQUIPMENT SHOWN ON THIS SHEET FOR DIAGRAMMATICAL PURPOSES ONLY. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS WITH ENGINEER & OWNER IN THE FIELD PRIOR TO PERFORMING WORK.
3. EQUIPMENT DIMENSIONS, BUILDING DIMENSIONS AND DIMENSIONS SHALL BE FIELD VERIFIED.
4. ALL PENETRATIONS SHALL BE APPROPRIATELY SEALED.
5. FOR ADDITIONAL CONDUIT WIRING INFORMATION SEE ONE-LINE DIAGRAM AND DUCTBANK SCHEDULES.
6. COORDINATE ALL WORK SHOWN THIS SHEET WITH OTHER DISCIPLINES.
7. INSTALLATION SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST VERSION OF THE MASSACHUSETTS ELECTRIC CODE (MEC), & LOCAL AMENDMENTS.

◇XX SHEET DEMOLITION NOTES

1. DEMOLISH EXISTING SUBMERSIBLE PUMPS, CONDUIT, CONDUCTORS, AND ALL ASSOCIATED APPURTENANCES COMPLETE BACK TO ELECTRICAL EQUIPMENT ENCLOSURE.
2. DEMOLISH EXISTING ELECTRICAL EQUIPMENT ENCLOSURE, CONDUIT, CONDUCTORS, AND ALL ASSOCIATED APPURTENANCES COMPLETE BACK TO UTILITY METER. UTILITY METER, SERVICE CONDUIT AND CONDUCTORS TO REMAIN FOR REUSE.
3. DEMOLISH EXISTING NATURAL GAS GENERATOR, CONDUIT, CONDUCTORS, AND ALL ASSOCIATED APPURTENANCES COMPLETE BACK TO ELECTRICAL EQUIPMENT ENCLOSURE ATS.

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

PE SEAL:

COMMONWEALTH OF MASSACHUSETTS
ANDREW FITZPATRICK
ELECTRICAL
No. 50761
REGISTERED PROFESSIONAL ENGINEER

Digitally signed by Andrew J. Fitzpatrick
DN: CN=fit...
E=ajfitzpatrick@woodardcurran.com, O=Woodard & Curran, OU=Technical Delivery Group, CN=Andrew J. Fitzpatrick
Location: Bangor, ME
Reason: I agree to the terms defined by the placement of my signature on this document.
Contact Info: 800.426.4262
Date: 2025.01.22 15:19:34-05'00'

ISSUED FOR BID - NOT FOR CONSTRUCTION

CLIENT INFO:

TOWN OF TEWKSBURY, MASSACHUSETTS

DEVONSHIRE ROAD PUMP STATION IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0235334.00
DATE:	JANUARY 2025
SCALE:	AS NOTED
DESIGNED BY:	DJB
DRAWN BY:	DJB
CHECKED BY:	AJF
FILENAME:	ED-005.dwg

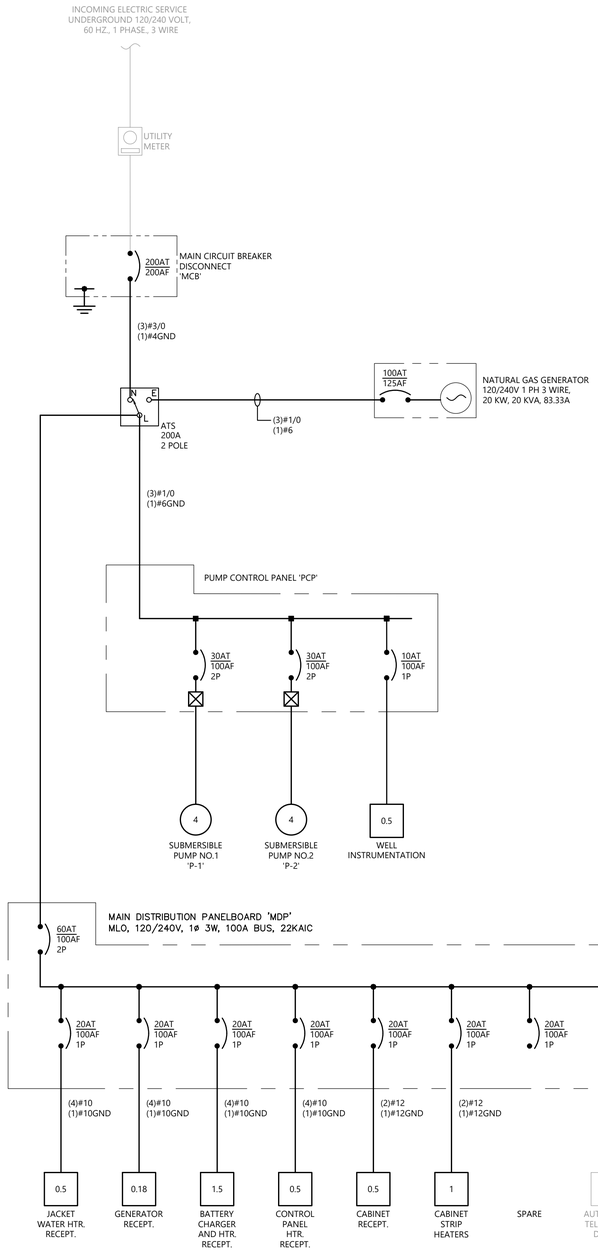
DRAWING TITLE:

ELECTRICAL DEMOLITION SITE PLAN

DRAWING NO:

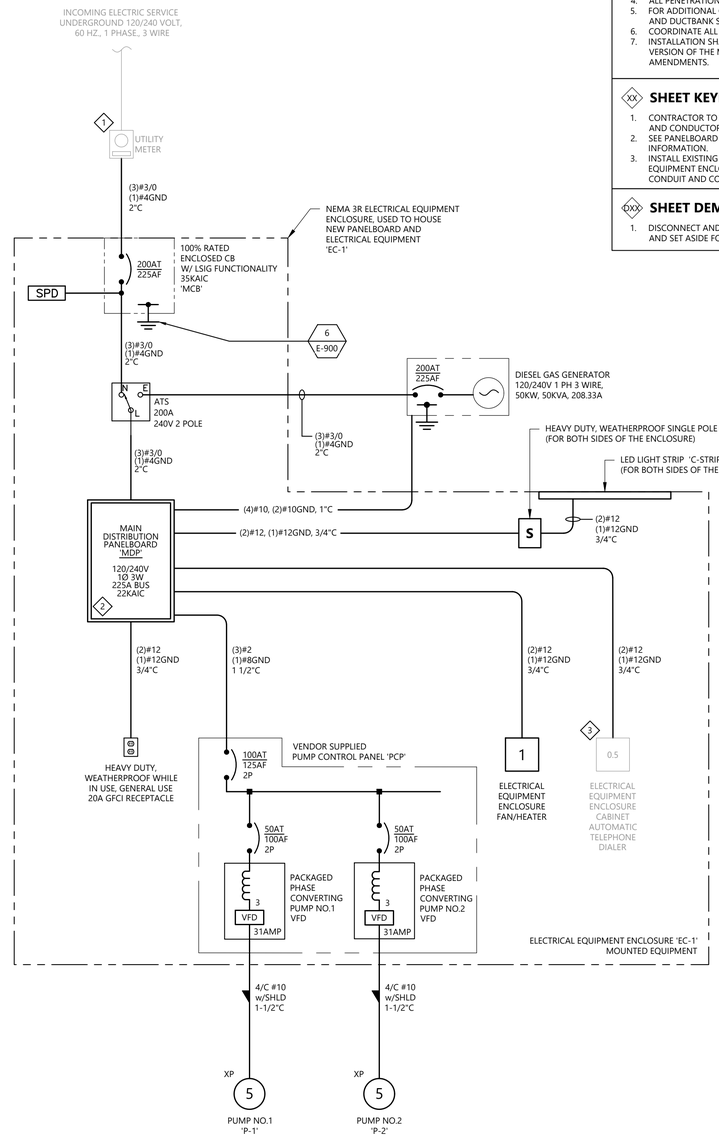
ED-005

\\woodardcurran.net\shared\Projects\0235334.00 Tewksbury MA Devonshire Pump Station Upgrades\wip\Drawings\Electrical\ED-005.dwg, Jan 22, 2025 - 2:10pm JFORTIN



DEMOLITION ONE–LINE DIAGRAM

SCALE: NO SCALE



PROPOSED ONE–LINE DIAGRAM

SCALE: NO SCALE

SHEET GENERAL NOTES

1. ALL ITEMS SHOWN WITH LIGHT DESIGNATION INDICATES EXISTING EQUIPMENT. ALL ITEMS SHOWN WITH BOLD DESIGNATION INDICATES DEMOLISHED OR RELOCATED EQUIPMENT, UNLESS SPECIFICALLY INDICATED OTHERWISE.
2. EQUIPMENT SHOWN ON THIS SHEET FOR DIAGRAMMATICAL PURPOSES ONLY. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS WITH ENGINEER & OWNER IN THE FIELD PRIOR TO PERFORMING WORK.
3. EQUIPMENT DIMENSIONS, BUILDING DIMENSIONS AND DIMENSIONS SHALL BE FIELD VERIFIED.
4. ALL PENETRATIONS SHALL BE APPROPRIATELY SEALED.
5. FOR ADDITIONAL CONDUIT WIRING INFORMATION SEE ONE-LINE DIAGRAM AND DUCTBANK SCHEDULES.
6. COORDINATE ALL WORK SHOWN THIS SHEET WITH OTHER DISCIPLINES.
7. INSTALLATION SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST VERSION OF THE MASSACHUSETTS ELECTRIC CODE (MEC), & LOCAL AMENDMENTS.

SHEET KEYNOTES

1. CONTRACTOR TO REROUTE AND RECONNECT EXISTING SERVICE CONDUIT AND CONDUCTORS INTO EXISTING UTILITY METER.
2. SEE PANELBOARD SCHEDULE FOR ADDITIONAL 'MDP' PANELBOARD CIRCUIT INFORMATION.
3. INSTALL EXISTING MISSION AUTO DIALER WITHIN NEW ELECTRICAL EQUIPMENT ENCLOSURE WITH NEW FEEDER AND COMMUNICATIONS CONDUIT AND CONDUCTORS.

SHEET DEMOLITION NOTES

1. DISCONNECT AND REMOVE EXISTING MISSION AUTO DIALER, MAKE SAFE, AND SET ASIDE FOR REUSE.

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

PE SEAL:

COMMONWEALTH OF MASSACHUSETTS
ANDREW FITZPATRICK
ELECTRICAL
No. 50761
REGISTERED PROFESSIONAL ENGINEER

Digitally signed by Andrew J. Fitzpatrick
DN: CN=US, E=afitzpatrick@woodardcurran.com, O=Woodard & Curran, OU=Technical Delivery Group, CN=Andrew J. Fitzpatrick
Location: Bangor, ME
Reason: I agree to the terms defined by the placement of my signature on this document.
Contact Info: 800.426.4262
Date: 2025.01.22 15:10:34-05'00'

ISSUED FOR BID - NOT FOR CONSTRUCTION

CLIENT INFO:

TOWN OF TEWKSBURY, MASSACHUSETTS

DEVONSHIRE ROAD PUMP STATION IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0235334.00
DATE:	JANUARY 2025
SCALE:	NO SCALE
DESIGNED BY:	DJB
DRAWN BY:	DJB
CHECKED BY:	AJF
FILENAME:	E-100.dwg

DRAWING TITLE:

ELECTRICAL
DEMOLITION AND PROPOSED ONE-LINE DIAGRAMS

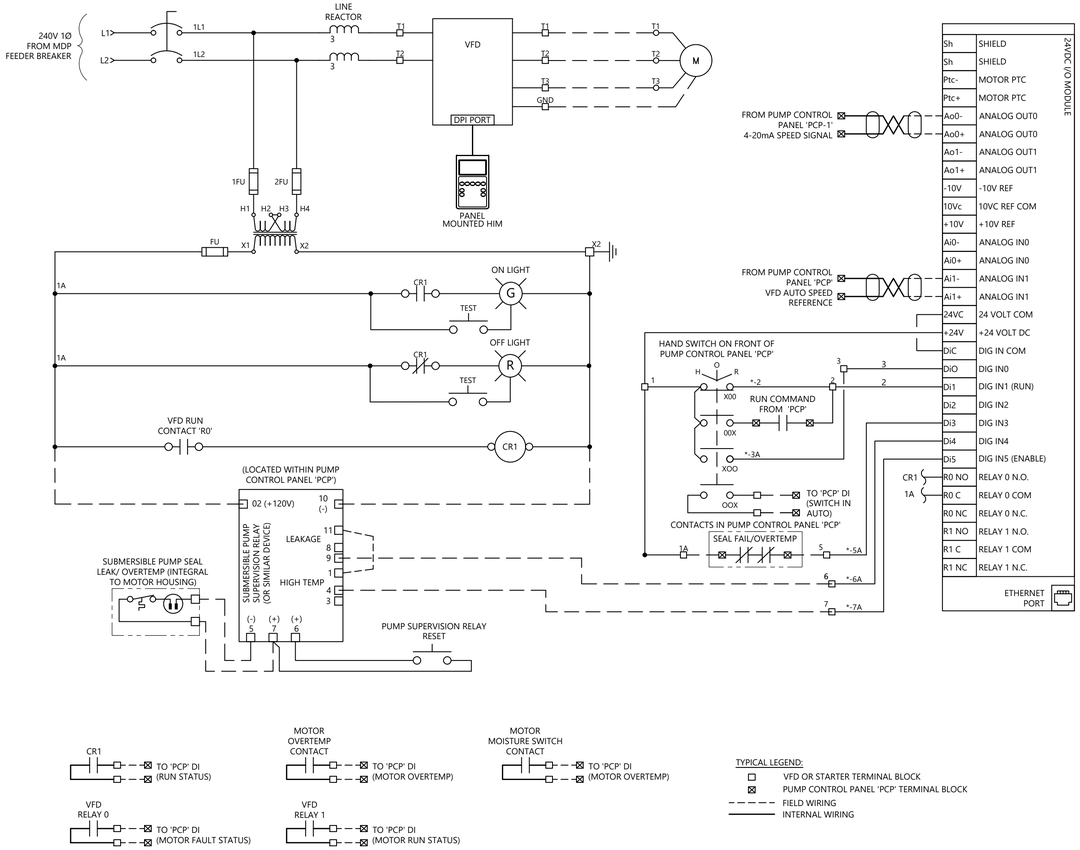
DRAWING NO:

E-010

\\woodardcurran.net\shared\Projects\0235334.00 Tewksbury MA Devonshire Pump Station Upgrades\wip\Drawings\Electrical\E-100.dwg, Jan 22, 2025 - 2:10pm JFORTIN

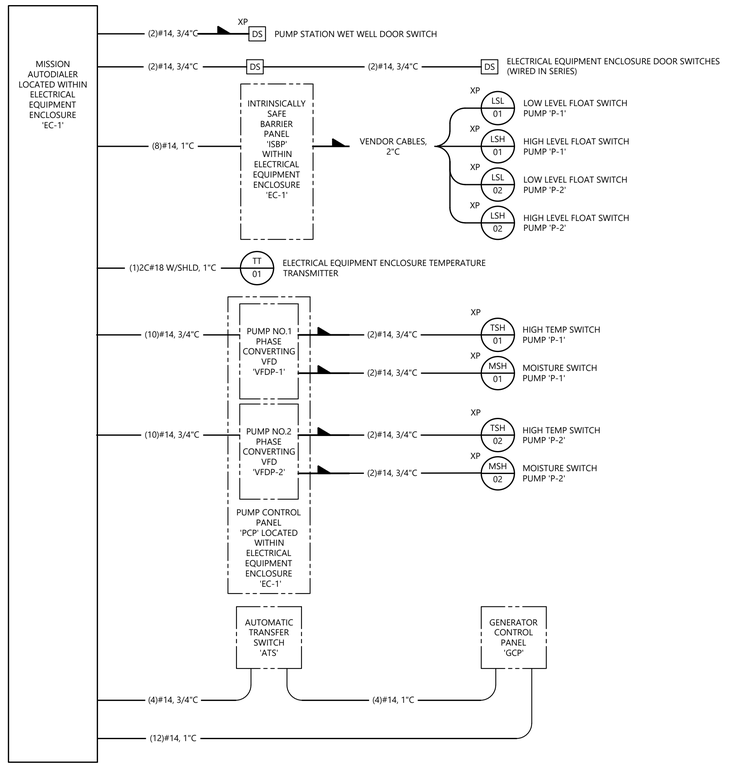
SHEET GENERAL NOTES

1. ALL ITEMS SHOWN WITH LIGHT DESIGNATION INDICATES EXISTING EQUIPMENT. ALL ITEMS SHOWN WITH BOLD DESIGNATION INDICATES DEMOLISHED OR RELOCATED EQUIPMENT, UNLESS SPECIFICALLY INDICATED OTHERWISE.
2. EQUIPMENT SHOWN ON THIS SHEET FOR DIAGRAMMATICAL PURPOSES ONLY. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS WITH ENGINEER & OWNER IN THE FIELD PRIOR TO PERFORMING WORK.
3. EQUIPMENT DIMENSIONS, BUILDING DIMENSIONS AND DIMENSIONS SHALL BE FIELD VERIFIED.
4. ALL PENETRATIONS SHALL BE APPROPRIATELY SEALED.
5. FOR ADDITIONAL CONDUIT WIRING INFORMATION SEE ONE-LINE DIAGRAM AND DUCTBANK SCHEDULES.
6. COORDINATE ALL WORK SHOWN THIS SHEET WITH OTHER DISCIPLINES.
7. INSTALLATION SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST VERSION OF THE MASSACHUSETTS ELECTRIC CODE (MEC), & LOCAL AMENDMENTS.



PUMPS 'P-1', AND 'P-2' WIRING DIAGRAM

SCALE: NO SCALE



INSTRUMENTATION RISER DIAGRAM

SCALE: NO SCALE

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

PE SEAL:

COMMONWEALTH OF MASSACHUSETTS
ANDREW FITZPATRICK
ELECTRICAL
No. 50761
REGISTERED PROFESSIONAL ENGINEER

Digitally signed by Andrew J. Fitzpatrick
DN: C=US, E=afitzpatrick@woodardcurran.com, O=Woodard & Curran, OU=Technical Delivery Group, CN=Andrew J. Fitzpatrick
Location: Bangor, ME
Reason: I agree to the terms defined by the placement of my signature on this document.
Contact Info: 800.426.4262
Date: 2025.03.22 15:19:35-05'00'

ISSUED FOR BID - NOT FOR CONSTRUCTION

CLIENT INFO:

TOWN OF TEWKSBURY, MASSACHUSETTS

DEVONSHIRE ROAD PUMP STATION IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0235334.00
DATE:	JANUARY 2025
SCALE:	NO SCALE
DESIGNED BY:	DJB
DRAWN BY:	DJB
CHECKED BY:	AJF
FILENAME:	E-500.dwg

DRAWING TITLE:

ELECTRICAL INSTRUMENTATION RISER DIAGRAM AND WIRING DIAGRAM

DRAWING NO:

E-500

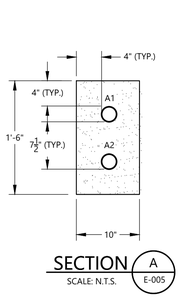
\\woodardcurran.net\shared\Projects\0235334.00 Tewksbury MA Devonshire Pump Station Upgrades\wip\Drawings\Electrical\E-500.dwg, Jan 22, 2025 - 2:11pm, JFORTIN

SHEET GENERAL NOTES

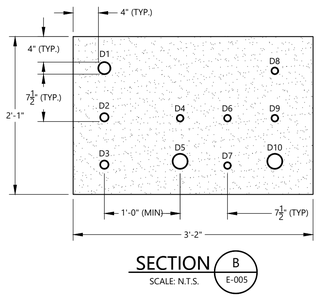
1. ALL ITEMS SHOWN WITH LIGHT DESIGNATION INDICATES EXISTING EQUIPMENT. ALL ITEMS SHOWN WITH BOLD DESIGNATION INDICATES DEMOLISHED OR RELOCATED EQUIPMENT, UNLESS SPECIFICALLY INDICATED OTHERWISE.
2. EQUIPMENT SHOWN ON THIS SHEET FOR DIAGRAMMATICAL PURPOSES ONLY. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS WITH ENGINEER & OWNER IN THE FIELD PRIOR TO PERFORMING WORK.
3. EQUIPMENT DIMENSIONS, BUILDING DIMENSIONS AND DIMENSIONS SHALL BE FIELD VERIFIED.
4. ALL PENETRATIONS SHALL BE APPROPRIATELY SEALED.
5. FOR ADDITIONAL CONDUIT WIRING INFORMATION SEE ONE-LINE DIAGRAM AND DUCTBANK SCHEDULES.
6. COORDINATE ALL WORK SHOWN THIS SHEET WITH OTHER DISCIPLINES.
7. INSTALLATION SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST VERSION OF THE MASSACHUSETTS ELECTRIC CODE (MEC), & LOCAL AMENDMENTS.

DUCTBANK SCHEDULE

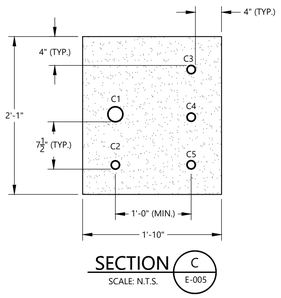
DUCTBANK	SECTION	SPARE	SIZE	FROM	TO	DESCRIPTION	NOTES
A	A1	POWER	2"	NATIONAL GRID UTILITY METER	MAIN DISCONNECT SWITCH 'MDS'	PUMP STATION FEEDER	
	A2	SPARE	2"	NATIONAL GRID UTILITY METER	MAIN DISCONNECT SWITCH 'MDS'	SPARE	STUB UP AND PROVIDE PULL STRING FOR SPARE CONDUIT
B	B1	POWER	1"	ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1' PUMP CONTROL PANEL 'PCP'	WET WELL PUMP NO.1	PUMP NO.1 FEEDER	
	B2	POWER	1"	ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1' PUMP CONTROL PANEL 'PCP'	WET WELL PUMP NO.2	PUMP NO.2 FEEDER	
	B3	SPARE	1"	ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1' PUMP CONTROL PANEL 'PCP'	WET WELL	SPARE	
	B4	CONTROL	3/4"	ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1' MISSION AUTODIALER 'AD-1'	WET WELL	DOOR SWITCH STATUS	
	B5	CONTROL	2"	ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1' 'ISBP'	WET WELL	WET WELL LEVEL COMMUNICATIONS	
	B6	CONTROL	3/4"	ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1' PUMP CONTROL PANEL 'PCP'	WET WELL PUMP NO.1	MOISTURE SWITCH STATUS	
	B7	CONTROL	3/4"	ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1' PUMP CONTROL PANEL 'PCP'	WET WELL PUMP NO.1	OVERTEMP STATUS	
	B8	CONTROL	3/4"	ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1' PUMP CONTROL PANEL 'PCP'	WET WELL PUMP NO.2	MOISTURE SWITCH STATUS	
	B9	CONTROL	3/4"	ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1' PUMP CONTROL PANEL 'PCP'	WET WELL PUMP NO.2	OVERTEMP STATUS	
	B10	CONTROL	2"	ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1' PUMP CONTROL PANEL 'PCP'	WET WELL	SPARE	CAP AND PROVIDE PULL STRING FOR SPARE CONDUIT
C	C1	POWER	2"	ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1' ATS	GENERATOR	GENERATOR FEEDER	
	C2	POWER	1"	ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1' PANELBOARD 'MDP'	GENERATOR	GENERATOR BLOCK HEATER, BATTERY CHARGER, CONTROL PANEL	
	C3	CONTROL	1"	ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1' ATS	GENERATOR	GENERATOR START/STOP	
	C4	CONTROL	1"	ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1' MISSION AUTODIALER 'AD-1'	GENERATOR	GENERATOR STATUS	
	C5	CONTROL	1"	ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1'	GENERATOR	SPARE	CAP AND PROVIDE PULL STRING FOR SPARE CONDUIT



SECTION A / E-005
SCALE: N.T.S.



SECTION B / E-005
SCALE: N.T.S.



SECTION C / E-005
SCALE: N.T.S.

DIRECTORY	BRKR	POLE	CKT #	KVA	KVA LOADS A	KVA LOADS B	KVA	CKT #	POLE	BRKR	DIRECTORY
VENDOR PUMP CONTROL PANEL 'PCP'	100	2	1	6.72	7.72		1.00	2	2	20	ELECTRICAL EQUIPMENT ENCLOSURE HEATER 'EUH-1'
			3	6.72		6.78	0.06	4	1	20	ELECTRICAL EQUIPMENT ENCLOSURE LIGHTING
GENERATOR CONTROL PANEL / BLOCK HEATER	20	1	5	1.20	1.38		0.18	6	1	20	ELECTRICAL EQUIPMENT ENCLOSURE RECEPTACLE
GENERATOR BATTERY CHARGER	20	1	7	1.20		1.70	0.50	8	1	20	ISBP
SPARE	20	1	9		1.00		1.00	10	1	20	ELECTRICAL EQUIPMENT ENCLOSURE MISSION AUTODIALER 'AD-1'
SPARE	20	1	11			0.00		12	1	20	SPARE
SPARE	20	1	13		0.00			14	1	20	SPARE
SPARE	20	1	15			0.00		16	1	20	SPARE
SPARE	20	1	17		0.00			18	1	20	SPARE
SPARE	20	1	19			0.00		20	1	20	SPARE
SPARE	20	1	21		0.00			22	1	20	SPARE
SPARE	20	1	23			0.00		24	1	20	SPARE
SPARE	20	1	25		0.00			26	1	20	SPARE
SPARE	20	1	27			0.00		28	1	20	SPARE
SPARE	20	1	29		0.00			30	1	20	SPARE
				SUBTOTAL	10.10	8.48	SUBTOTAL				

VOLTAGE:	120/240	TOTAL kVA	18.58	PANEL NAME:	MDP
MAIN BREAKER:	200	TOTAL AMPS	77	LOCATION:	DEVONSHIRE ROAD PUMP STATION
BUSES:	225			MOUNTING:	SURFACE
PH & WIRES:	1PH 3W			AIC RATING:	22 kAIC
NOTES:					

PANELBOARD 'MDP' PANEL SCHEDULE
SCALE: NO SCALE

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

PE SEAL:

COMMONWEALTH OF MASSACHUSETTS
ANDREW FITZPATRICK
ELECTRICAL
No. 50761
REGISTERED PROFESSIONAL ENGINEER

Digitally signed by Andrew J. Fitzpatrick
DN: CN=AJF, E=AFitzpatrick@woodardcurran.com, O=Woodard & Curran, OU=Technical
Reason: I agree to the terms defined by the document in my signature on this document
Location: Bangor, ME
Contact Info: 800.426.4262
Date: 2025.01.22 15:19:36-05'00'

ISSUED FOR BID - NOT FOR CONSTRUCTION

CLIENT INFO:

TOWN OF TEWKSBURY, MASSACHUSETTS

DEVONSHIRE ROAD PUMP STATION IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0235334.00
DATE:	JANUARY 2025
SCALE:	NO SCALE
DESIGNED BY:	DJB
DRAWN BY:	DJB
CHECKED BY:	AJF
FILENAME:	E-600.dwg

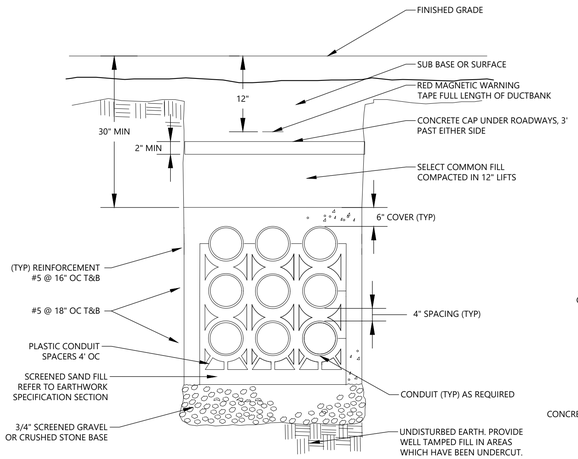
DRAWING TITLE:
ELECTRICAL SCHEDULES

DRAWING NO:
E-600

\\woodardcurran.net\share\Projects\0235334.00 Tewksbury MA Devonshire Pump Station Upgrades\wip\Drawings\Electrical\E-600.dwg, Jan 22, 2025 - 2:11pm, JFORTIN

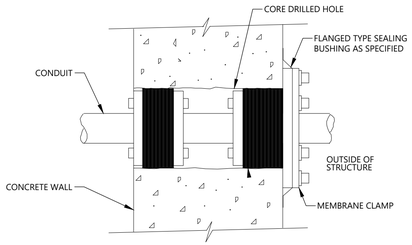
NOTES:

1. PROVIDE MINIMUM 1'-0" SPACING WITHIN DUCTBANK BETWEEN POWER AND CONTROL/COMMUNICATIONS CONDUITS.
2. QUANTITY OF DUCTS SHOWN IN DETAILS ARE SHOWN DIAGRAMMATICALLY ONLY TO IDENTIFY GENERAL CONSTRUCTION AND SPACING REQUIREMENTS. QUANTITY AND SIZE OF CONDUITS SHALL BE AS IDENTIFIED IN THE DUCTBANK SCHEDULE.
3. ALL CONCRETE SHALL BE 4000PSI AT 28 DAYS.


FINISHED GRADE
SUB BASE OR SURFACE
RED MAGNETIC WARNING TAPE FULL LENGTH OF DUCTBANK
12"
30" MIN
2" MIN
CONCRETE CAP UNDER ROADWAYS, 3' PAST EITHER SIDE
SELECT COMMON FILL COMPACTED IN 12" LIFTS
6" COVER (TYP)
(TYP) REINFORCEMENT #5 @ 16" OC T&B
#5 @ 18" OC T&B
4" SPACING (TYP)
PLASTIC CONDUIT SPACERS 4' OC
SCREENED SAND FILL REFER TO EARTHWORK SPECIFICATION SECTION
CONDUIT (TYP) AS REQUIRED
3/4" SCREENED GRAVEL OR CRUSHED STONE BASE
UNDISTURBED EARTH. PROVIDE WELL TAMPED FILL IN AREAS WHICH HAVE BEEN UNDERCUT.

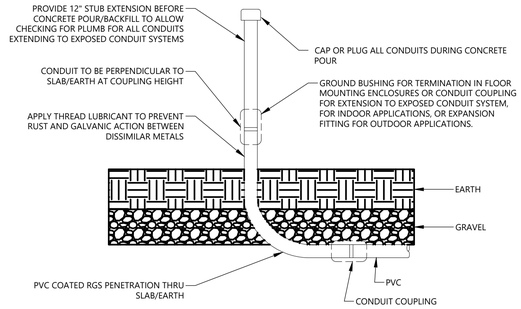
1 TYPE II: TYPICAL SAND ENCASED/ CONCRETE CAPPED UNDERGROUND DUCT BANK DETAIL

SCALE: NO SCALE



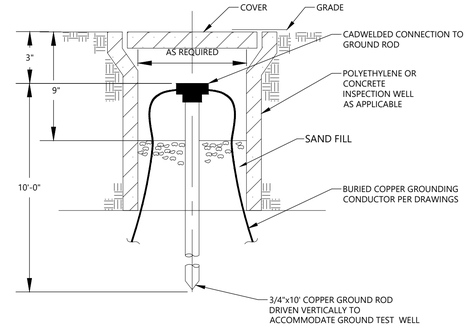
2 CONDUIT PENETRATION THROUGH EXISTING CONCRETE WALL

SCALE: NO SCALE


PROVIDE 12" STUB EXTENSION BEFORE CONCRETE POUR/BACKFILL TO ALLOW CHECKING FOR PLUMB FOR ALL CONDUITS EXTENDING TO EXPOSED CONDUIT SYSTEMS
CAP OR PLUG ALL CONDUITS DURING CONCRETE POUR
CONDUIT TO BE PERPENDICULAR TO SLAB/EARTH AT COUPLING HEIGHT
GROUND BUSHING FOR TERMINATION IN FLOOR MOUNTING ENCLOSURES OR CONDUIT COUPLING FOR EXTENSION TO EXPOSED CONDUIT SYSTEM, FOR INDOOR APPLICATIONS, OR EXPANSION FITTING FOR OUTDOOR APPLICATIONS.
APPLY THREAD LUBRICANT TO PREVENT RUST AND GALVANIC ACTION BETWEEN DISSIMILAR METALS
EARTH
GRAVEL
PVC
PVC COATED RGS PENETRATION THRU SLAB/EARTH
CONDUIT COUPLING

3 CONDUIT STUB-UP/UNDERGROUND PENETRATION DETAIL

SCALE: NO SCALE

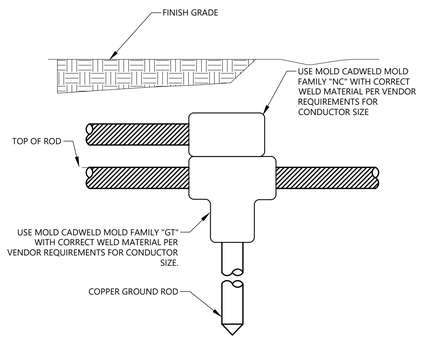


4 GROUND INSPECTION WELL DETAIL

SCALE: NO SCALE

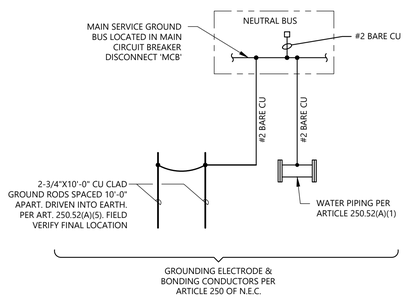
NOTES:

1. INSPECTION WELLS IN ROADWAYS SHALL ADHERE TO AASHTO H20 LOADING REQUIREMENTS.
2. WELLS SHALL BE FLUSH TYPE PRECAST CONCRETE, OR POLYMER CONCRETE PER AREA OF INSTALLATION. PROVIDE BOLTED DOWN COVERS WITH DESCRIPTION "GROUND ROD". PROVIDE STEEL COVERS FOR WELLS IN TRAFFIC AREAS.
3. TOP OF GROUND INSPECTION WELL SHALL BE LEVEL WITH FINISHED GRADE.


FINISH GRADE
USE MOLD CADWELD MOLD FAMILY "NC" WITH CORRECT WELD MATERIAL PER VENDOR REQUIREMENTS FOR CONDUCTOR SIZE
TOP OF ROD
USE MOLD CADWELD MOLD FAMILY "GT" WITH CORRECT WELD MATERIAL PER VENDOR REQUIREMENTS FOR CONDUCTOR SIZE.
COPPER GROUND ROD

5 GROUND ROD INSTALLATION

SCALE: NO SCALE

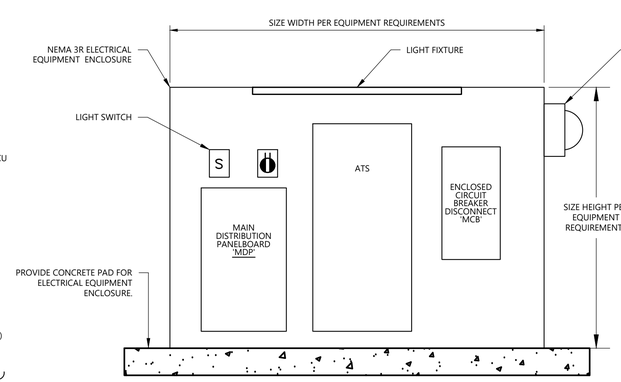

MAIN SERVICE GROUND BUS LOCATED IN MAIN CIRCUIT BREAKER DISCONNECT 'MCB'
NEUTRAL BUS
#2 BARE CU
#2 BARE CU
#2 BARE CU
2-3/4"X10'-0" CU CLAD GROUND RODS SPACED 10'-0" APART, DRIVEN INTO EARTH, PER ART. 250.52(A)(5). FIELD VERIFY FINAL LOCATION
WATER PIPING PER ARTICLE 250.52(A)(1)
GROUNDING ELECTRODE & BONDING CONDUCTORS PER ARTICLE 250 OF N.E.C.

6 SYSTEM GROUNDING DETAIL

NO SCALE

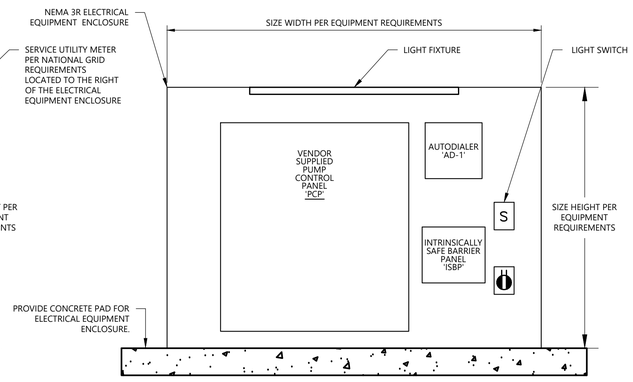
NOTES:

1. ELECTRICAL EQUIPMENT ENCLOSURE TO BE TWO SIDED NEMA 3R, TWO DOOR (1 LOUVERED), AND PAD LOCKABLE.
2. FIELD VERIFY ARRANGEMENT OF COMPONENTS WITHIN ELECTRICAL EQUIPMENT ENCLOSURE.
3. BACK SIDE OF EQUIPMENT ENCLOSURE TO HOUSE SECURITY EQUIPMENT.
4. PROVIDE RAISED CONCRETE PAD TO MOUNT EQUIPMENT ENCLOSURE. SEE CIVIL AND STRUCTURAL DRAWINGS FOR FLOOD PLAIN ELEVATIONS.
5. AUTO DIALER 'AD-1', VENDOR PUMP CONTROL PANEL 'PCP, AND ISBP LOCATED ON OPPOSITE SIDE OF POWER DISTRIBUTION EQUIPMENT SIDE OF ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1'.


SIZE WIDTH PER EQUIPMENT REQUIREMENTS
NEMA 3R ELECTRICAL EQUIPMENT ENCLOSURE
LIGHT FIXTURE
SERVICE UTILITY METER PER NATIONAL GRID REQUIREMENTS LOCATED TO THE RIGHT OF THE ELECTRICAL EQUIPMENT ENCLOSURE
LIGHT SWITCH
S
ATS
MAIN DISTRIBUTION PANELBOARD 'MDP'
ENCLOSED CIRCUIT BREAKER DISCONNECT 'MCB'
SIZE HEIGHT PER EQUIPMENT REQUIREMENTS
PROVIDE CONCRETE PAD FOR ELECTRICAL EQUIPMENT ENCLOSURE.

9 ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1' DETAIL

SCALE: NO SCALE


SIZE WIDTH PER EQUIPMENT REQUIREMENTS
NEMA 3R ELECTRICAL EQUIPMENT ENCLOSURE
LIGHT FIXTURE
LIGHT SWITCH
VENDOR SUPPLIED PUMP CONTROL PANEL 'PCP'
AUTODIALER 'AD-1'
S
INTRINSICALLY SAFE BARRIER PANEL 'ISBP'
SIZE HEIGHT PER EQUIPMENT REQUIREMENTS
PROVIDE CONCRETE PAD FOR ELECTRICAL EQUIPMENT ENCLOSURE.

9 ELECTRICAL EQUIPMENT ENCLOSURE 'EC-1' DETAIL

SCALE: NO SCALE

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

PE SEAL:

COMMONWEALTH OF MASSACHUSETTS
ANDREW FITZPATRICK
ELECTRICAL
No. 50761
REGISTERED PROFESSIONAL ENGINEER

Digitally signed by Andrew J. Fitzpatrick
DN: cn=Andrew J. Fitzpatrick, E=afitzpatrick@woodardcurran.com, O=Woodard & Curran, OU=Technical Delivery Group, CN=Andrew J. Fitzpatrick
Location: Bangor, ME
Reason: I agree to the terms defined by the placement of my signature on this document.
Contact Info: 800.426.4262
Date: 2025.01.22 15:19:37-05'00'

ISSUED FOR BID - NOT FOR CONSTRUCTION

CLIENT INFO:

TOWN OF TEWKSBURY, MASSACHUSETTS

DEVONSHIRE ROAD PUMP STATION IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0235334.00
DATE:	JANUARY 2025
SCALE:	XXX
DESIGNED BY:	DJB
DRAWN BY:	DJB
CHECKED BY:	AJF
FILENAME:	E-900.dwg

DRAWING TITLE:

ELECTRICAL DETAILS

DRAWING NO:

E-900

\\woodardcuran.net\shared\Projects\0235334.00 Tewksbury MA Devonshire Pump Station Upgrades\wip\Drawings\Electrical\E-900.dwg, Jan 22, 2025 - 2:12pm JFORTIN